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Fraser Valley System Reinforcement

Public Consultation Program

Submitted to: B.C. Hydro

Submitted by: Context Research Ltd.

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Executive Summary

In July 1989, a public consultation program was implemented as part of planning studies for the proposed Fraser Valley system reinforcement. The program, designed to provide a forum for public discussion and to incorporate public input into the planning process, involved two phases. Phase 1 was initiated in conjunction with studies for a proposed transmission line intertie with Puget Sound Power and Light Co. (PSPL) of Bellevue, Washington. This Phase was concluded in August 1990 when B.C. Hydro made the decision to wind down studies for the intertie. Planning for system reinforcement continued with the implementation of Phase 2 from September, 1990, to July, 1991.

Summary of Phase 1

At the completion of Phase 1, five public meetings had been held, involving approximately twenty hours of discussion about the intertie and substation reinforcement projects. Meetings were held in Aldergrove, Abbotsford and Matsqui, and were attended by over 350 people. In addition, members of the project team met with local and regional governments, interest groups, property owners, and the media at different times during the project to provide information, to respond to questions and concerns, and to incorporate public views and ideas into the planning process. The majority of public interest focused on the transmission line intertie with PSPL. Because most of the system reinforcement portion of Phase 1 was directed toward substation options, the study was referred to as "substation" reinforcement for clarity. Public concerns with system reinforcement appeared to be minimal based on the accepted need for additional transmission capacity in the area, and the proposed use of an existing substation at Clayburn for the project.

Summary of Phase 2

The Phase 2 study dealt only with "system" reinforcement. It was initiated after an analysis of the feasible reinforcement options, which pointed to expansion of Clayburn substation as the option most likely to have the greatest overall benefit with the least overall impact. Phase 2 consultation initiatives, therefore, focused on

identifying and responding to issues specific to the Clayburn expansion proposal.

Public response to advertisements and response to letters sent to elected officials in Langley and Aldergrove was very low, with only 5 Public Information Requests (PIRs) and 1 response from local government received. More interest was indicated in the Matsqui/Abbotsford area, where 20 PIRs and 2 letters from government resulted.

Letters and project information were mailed to approximately 350 property owners in the area surrounding Clayburn substation, and 40 residences were contacted directly during a door-to-door canvass. Of the 20 PIRs received from Matsqui/Abbotsford, 10 were as a result of the mailout. The door-to-door canvass found that 75% (30) of the 40 residents contacted either expressed no concerns with the project or their concerns appeared to be resolved with additional project information.

Where concerns were raised, they tended to cluster around three main topic areas:

- **Electric and Magnetic Field (EMF) Effects**
  Several residents expressed concern that the substation expansion would increase EMF levels in the residential areas in the vicinity of the substation. EMF effects have become a public health issue, and the Clayburn proposal appeared to provide a catalyst for EMF concerns to be raised once again.

  When it was explained that any measurable changes to EMF levels would be largely confined to the substation right-of-way, a minimum of 300 metres from the nearest residence, the majority of public concerns were resolved.

- **Property Values and Visual Impacts**
  Approximately 6 residents expressed concern that the substation expansion would lead to a decline in the market value of their property due to potential visual impacts. Some residents noted, however, that there are already a number of industrial activities within their views (e.g. existing transmission lines, transfer station and

recycling depot), and that the substation expansion would not make a significant difference.

The project team noted that visual screening would be considered as part of the substation design.

- **Other Concerns**

  A few participants expressed a concern that the purpose of the substation was to facilitate a transmission line intertie to the United States. The project team responded noting that the substation reinforcement is needed for domestic purposes and that B.C. Hydro has no new plans for an intertie in the Fraser Valley.

Conclusion

The public involvement process took place over a two year period, initially as part of consultations for the proposed intertie with Puget Sound Power and Light. Throughout the consultation process, public interest and concern about the Clayburn substation expansion appeared to be minimal. For the most part, there was support for system reinforcement at the Clayburn site. Where concerns were encountered, efforts were made to work with the public on an individual basis to resolve potential issues.

1.0 Introduction

In December 1990, B.C. Hydro retained the services of Context Research Ltd. to assist B.C. Hydro in completing public consultation studies for system reinforcement in the Fraser Valley. The original program, which began in July 1989, had also included public response to plans for a 230 kV transmission line intertie with the Puget Sound Power and Light Co. (PSPL) of Bellevue, Washington. Due to agreements reached by the Bonneville Power Authority and PSPL, B.C. Hydro decided to wind down its studies on the intertie. Public consultation continued, however, for the system reinforcement to identify potential public interests related to the substation reinforcement.

This report provides a detailed account of the public consultation process for the substation reinforcement. Supporting information is contained in the Appendices at the end of the discussion of public issues.

To carry out the planning studies and the public consultation program, B.C. Hydro established a 'project team' comprised of Hydro personnel and consultants. Throughout this report, reference to the project team is meant to include the public consultation consultants.

1.1 Public Consultation Objectives

At the outset of the consultation program, in July, 1989, the project team established a specific goal and set of objectives to provide a framework for each step of the program. The overall goal of the consultation program was to:

> ***"improve planning for the transmission system reinforcement by incorporating public ideas and concerns into the planning process".***

To effectively meet this goal, the project team established the following set of objectives:

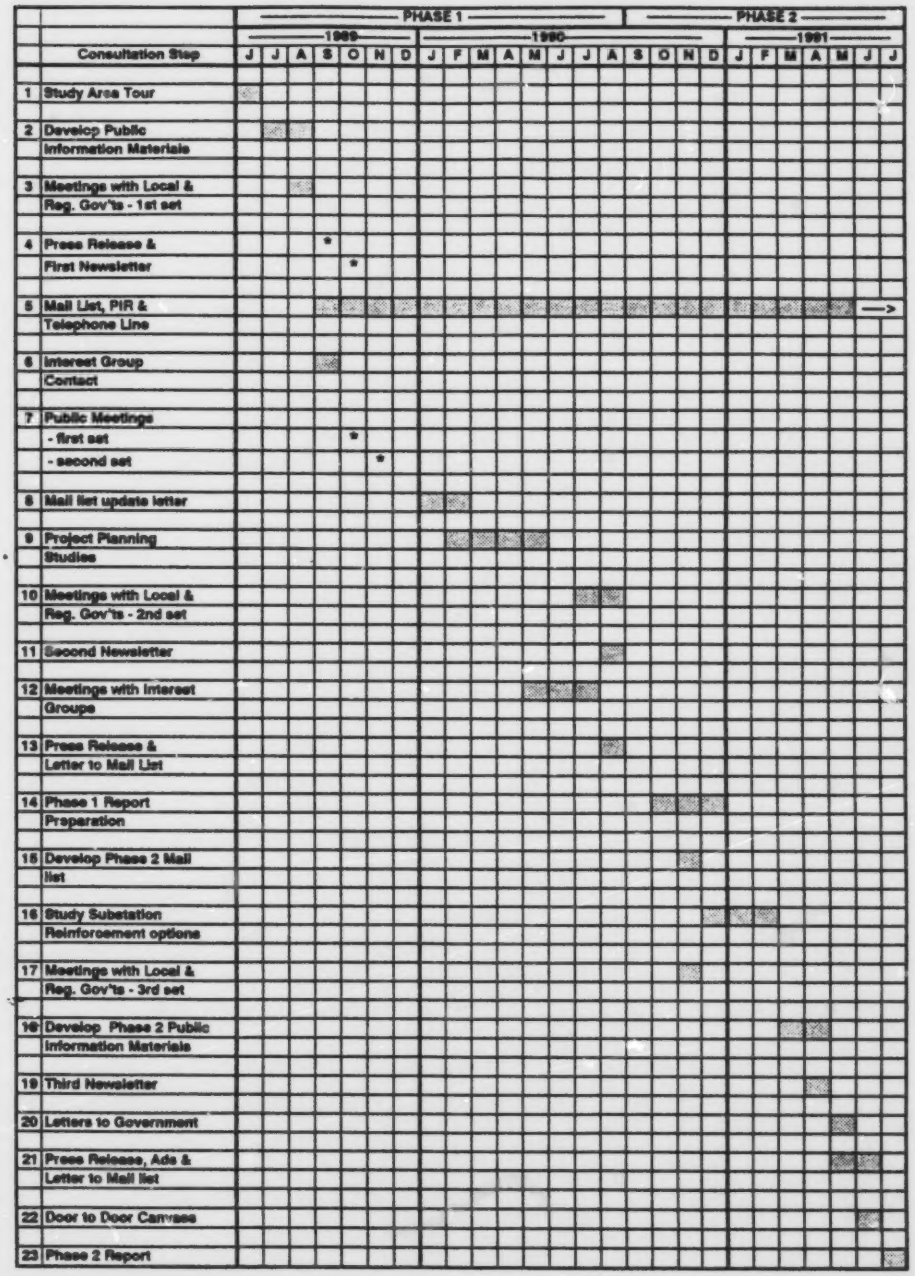
1. To provide as much information as is reasonably possible about the substation reinforcement to interested parties

2. To incorporate public ideas and concerns into the planning process, particularly the analysis of alternative substation sites and potential issues

3. To report back to the general public about input received during the consultation program and how that input has been used in the planning process.

With these objectives in place, the project team set forth to develop and present project information materials and to respond to public interests and concerns. Key steps which have occurred in the consultation process to date are outlined in Figure 1 and are presented in the following discussion.

Figure 1 - Public Consultation Process
Key Steps


PHASE 1
PHASE 2
1989
1990
1991
J J A S O N D J F M A M J J A S O N D J F M A M J J
Consultation Step
1 Study Area Tour
2 Develop Public Information Materials
3 Meetings with Local & Reg. Gov'ts - 1st set
4 Press Release & First Newsletter
5 Mail List, PIR & Telephone Line
6 Interest Group Contact
7 Public Meetings - first set - second set
8 Mail list update letter
9 Project Planning Studies
10 Meetings with Local & Reg. Gov'ts - 2nd set
11 Second Newsletter
12 Meetings with Interest Groups
13 Press Release & Letter to Mail List
14 Phase 1 Report Preparation
15 Develop Phase 2 Mail list
16 Study Subetation Reinforcement options
17 Meetings with Local & Reg. Gov'ts - 3rd set
18 Develop Phase 2 Public Information Materials
19 Third Newsletter
20 Letters to Government
21 Press Release, Ads & Letter to Mail list
22 Door to Door Canvass
23 Phase 2 Report

1.2 Assumptions

To guide the public consultation program, a number of assumptions pertaining to system reinforcement were made at the outset of the process:

- The consultation program would be proactive and progressive in attempting to identify and address public issues and concerns

- The public would play a direct role in identifying planning criteria to be taken into account when selecting suitable substation sites

- Clayburn substation would initially be presented as a more suitable site for station reinforcement because of its existing use, and the fact that land had been set aside for the expansion as part of the original development

- The consultation program would be flexible to meet the needs of the public and changes to the project study area. As the project became more focused on particular areas so, too, would the consultation program.

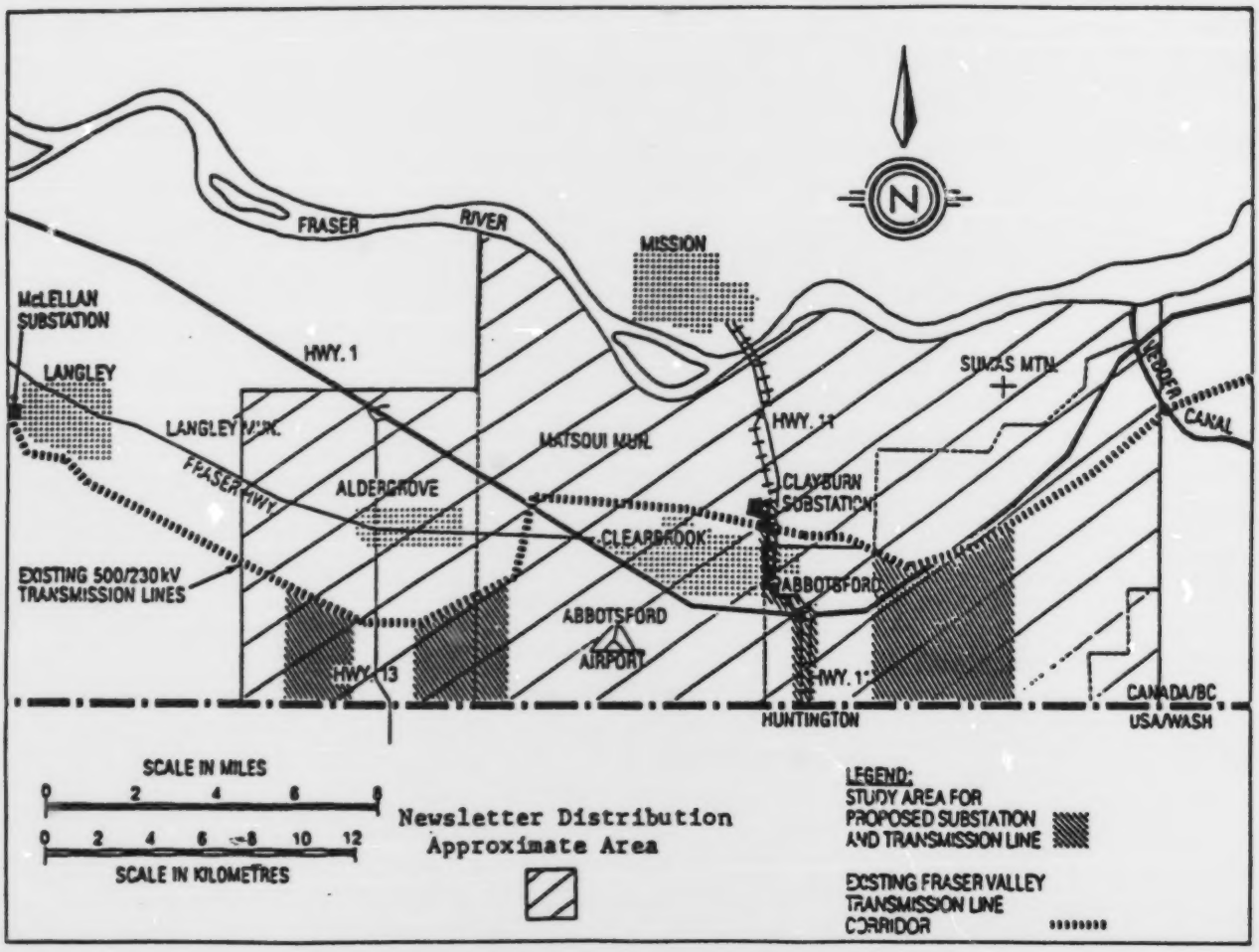
1.3 Study Area

The study area for the for the system reinforcement project initially included the Fraser Valley, south of Highway #1, to the U.S. border, and including the communities of Langley, Matsqui, Abbotsford, Aldergrove and Chilliwack. The Central Fraser Valley Regional District and portions of Fraser Cheam Regional District and the Greater Vancouver Regional District were in the study area. This required that municipal and regional government officials be kept informed and consulted as the study progressed.

The study area became the focus for distribution of information materials, advertising and public meetings. Although the vast majority of interest came from people in the

Matsqui-Abbotsford area, the process remained flexible and there was no attempt to limit public interest or involvement. As the project progressed, however, more attention was focused on those areas and individuals which could be more directly affected by the substation reinforcement project.

Figure 2 - Study Area



2.0 Methodology

The public consultation program was divided into two Phases, namely:

Phase 1 - Public Consultation Studies to Assist in Identifying Alternatives for Substation and Intertie Locations - July 1, 1989, to August, 1990.

Phase 1 included discussions with the public to identify planning constraints, and possible transmission line routes and substation sites. This Phase ended when B.C. Hydro decided to wind down studies for the intertie, and with the identification of Clayburn substation as the most suitable site for system reinforcement.

Phase 2 - Public Consultation for System Reinforcement at Clayburn

Phase 2 public consultation was designed to focus on the more suitable option for the system reinforcement, specifically that area in the vicinity of Clayburn substation. It involved direct contact with local residents and government officials to identify and address potential concerns.

2.1 Phase 1 - Public Consultation on Substation Options

Implementation of Phase 1 occurred in three stages, namely:

Stage I - Public Information and Notification
Development of project information materials, identification of stakeholders, and notification to the public.

Stage II - Public Consultation
Ongoing discussions with government officials, interest groups and the general public.

Stage III - Documentation and Monitoring

Documentation of public ideas and concerns, preparation of the consultation report and continued response to public inquiries.

Each stage consisted of a series of activities implemented over a two year time frame (Figure 1). Support information for Phase 1 is contained in a separate Appendix as part of the report on public response to the transmission line intertie study.

2.1.1 Stage I - Public Information and Notification

2.1.1.1 Tour of the Study Area

The Consultants first toured the project area by vehicle during the week of June 05, 1989. Site visits lasted for approximately two hours and provided the consultants with a general overview of the study area, the location of the existing east - west transmission line corridor, the location of residential areas and other land uses in the study area. The tour gave an indication of possible issues, for example, the potential location of the substation near residential areas, and its proximity to light industrial land uses.

2.1.1.2 Public Information Materials

Early in the consultation program, a variety of information materials were developed for presentation and distribution to the public. This included a project newsletter, a booklet entitled, 'Proposal for the Fraser Valley Substation and Puget Sound Power and Light Intertie Study', an information paper on electric and magnetic field effects, and copies of overheads used during presentations. All project information was placed into a folder to be distributed at meetings with the public, interest groups, local and regional governments and the media, and to respond to information inquiries.

Additional information materials produced later in the consultation process to address specific public interests raised by the public were added to the information kits. These included the second and third project newsletters and information sheets on the public consultation process, substation reinforcement requirements, B.C. Hydro's 1990 Electricity Plan, and information on the Burrard Thermal generating plant.

The substation reinforcement project was presented separate to the intertie in the information, and was identified as being required to meet the growing demand for electricity in the Fraser Valley.

2.1.1.3 Profile of the Study Area

To familiarize members of the project team with the study area and potential issues that could arise, a summary socio-economic profile was developed. Base information was collected on the geographic setting, present and future populations, and the social and economic characteristics of the Fraser Valley in and around Abbotsford, Aldergrove and Sumas Prairie. The profile was made available to the project team as background information in advance of public discussion sessions.

2.1.1.4 Meetings with Local Governments, and B.C. Hydro Staff

During the weeks of August 07 to 20, 1989, well in advance of the public forums, the project team met with senior staff and elected officials from local and regional governments to:

1. Inform them about the substation reinforcement project, and also the intertie

2. Outline the scope of the public consultation, planning and environmental studies proposed

3. Obtain feedback on potential issues, on how the consultation process should be handled and on special interest groups who should be involved or contacted.

Meetings were held with the City of Langley, the District of Matsqui, the Township of Langley and the District of Abbotsford. At these meetings, the project team outlined the rationale for the two projects, the proposed implementation schedule for public consultation and the nature of the studies to be undertaken. Potential issues pertaining to the substation which were identified by government officials included:

- The size of the substation and its potential aesthetic impact

- Impact to surrounding land use (e.g. loss of agricultural land)

- Potential Clayburn substation expansion impact to the soccer fields and surrounding residential areas.

Meetings with B.C. Hydro staff in the Abbotsford area took place during this same time period to inform them about the project in the event of information inquiries. It was also felt that Hydro employees would be aware of local issues and concerns because they may live and work in the area.

2.1.1.5 Notification to the Public, and MLAs and MPs

2.1.1.5.1 - Press Release

On September 08, 1989, a press release was issued informing the public about the system reinforcement and intertie projects. The press release provided a description and rationale for the two projects, and outlined the planning and public consultation studies to be completed. The press release was sent to all media in the study area, including the Vancouver Sun and Province. Two other press releases were issued on July 11, 1990 and on August 23, 1990. The July 11, 1990, release informed people about the status of the analysis of route and substation options. The final press release announced that B.C. Hydro was no longer pursuing the intertie option with PSPL but that planning for the system reinforcement would continue.

2.1.1.5.2 - Project Newsletter

Following the first press release, a newsletter was sent to households in the study area on October 18, 1989. Approximately 20,000 newsletters were distributed to households in the Aldergrove, Abbotsford, Matsqui and Sumas Prairie areas in advance of the first set of public meetings.

The newsletter described the system reinforcement, the need for the project, the project schedule, and the role of the public in assisting in the planning process. B.C. Hydro's toll free telephone information number and a clip out coupon were also part of the newsletter, allowing opportunity for public comment and requests for additional information. A copy of the newsletter is presented in Appendix A.

2.1.1.5.3 - Notification to Political Representatives

As part of the consultation program, B.C. Hydro kept local and regional governments, and provincial and federal politicians representing those communities in the study area informed about the project.

2.1.1.6 Mail List and Telephone Information Line

In order to ensure that interested parties were kept informed and to provide a central information source, a mail list was developed and Hydro's telephone information line was used to receive and respond to public inquiries. The mail list initially included government officials and interest groups, but was expanded to include all those people who signed in at public meetings, and those making telephone or written information inquiries.

Hydro's telephone information line is staffed during business hours and an answering machine is on after hours. As of September 15, 1990, at the completion of Phase 1, a total of 250 public information inquiries (PIRs) were recorded and all inquiries had received responses. Only 3 PIRs related to the substation component of the study.

2.1.2 Stage II - Public Consultation

The public consultation process provided a forum for direct public participation in identifying ideas and concerns about the proposed intertie and the substation reinforcement. Public information materials and the results of initial contacts with governments and interest groups provided a support base for this second stage.

2.1.2.1 - Interest Group Meetings

To identify potential issues and concerns with the intertie and substation reinforcement in advance of the public meetings, the project team attempted to identify interest groups in the study area which could be concerned about the projects. These included groups such as the Sumas Prairie Farmers, environmental and recreation organizations, and community associations. Initial telephone contact with groups and individuals occurred during September, 1989.

There was a relatively low response to this initial contact. Most of the ratepayers and community associations expressed very little interest in the system reinforcement or the intertie. As planning for the two projects progressed, interest grew substantially

and a variety of discussion sessions were held with ratepayers associations, interest groups, property owners, and local businesses. Concerns expressed by the public at these sessions focused primarily on the intertie with minimal concern about the system reinforcement.

2.1.2.2 - Public Meetings - First Set

The first two public meetings were held in the Aldergrove Community Hall and the Abbotsford Art Centre Annex on October 24 and 25, 1989, respectively. The purpose of these meetings was to discuss more general issues related to the need and rationale for system reinforcement and the intertie.

The meeting in Aldergrove was attended by approximately 60 people, while the meeting in Abbotsford was attended by only 6 people.

Both meetings started at 7:00 pm, with approximately thirty minutes of informal discussion between participants and members of the project team. During this initial period, participants viewed a variety of display materials and received an information kit comprised of material developed in Stage 1. After the first half hour, B.C. Hydro's Public Affairs Coordinator welcomed the public and introduced the project team. This was followed by a description of the intertie and system reinforcement projects by the Project Manager. The consultant then facilitated a question and discussion period, with specific concerns noted on a flip chart for future reference. If a question or concern could not be addressed by the project team, a commitment was made to register the comment and to develop a follow up response by mail or telephone. Although the majority of interest focused on the intertie, the concerns related to the system reinforcement included:

- Hydro's willingness to listen to concerns and the openness of the planning process
- Benefits of improved service to the local area as a result of the system reinforcement
- Aesthetic impacts to the area adjacent to the substation
- Potential health effects.

2.1.2.3 - Public Meetings - Second Set

After approximately 2 weeks, a second set of meetings was held to continue the public input process. These meetings were designed to specifically focus on criteria and issues which should be taken into account in selecting the intertie route and the substation location. The first meeting was held in the Aldergrove Kinsmen Community Hall on November 08, 1989, and the second in the Matsqui Community Hall on November 09, 1989. These meetings were originally designed to be working sessions. Large scale maps of the study area's environmental and land use resources had been prepared for public review and comment.

The first meeting, held in the Aldergrove Community Hall on November 08, was attended by over 200 people including residents from the United States who were opposed to the intertie project and had formed a group called N.O.P.E. (Neighbours Opposed to Power Line Encroachment) to oppose the PSPL plans. Due to the large number of participants, and the fact that many were attending for the first time, the workshop format was changed to a presentation format. The majority of the meeting focused on the intertie with little interest expressed about the system reinforcement project.

The second meeting was held in the Matsqui Community Hall the following evening, and was attended by approximately 40 people. The workshop format was effective in identifying issues and concerns, and the public took the opportunity to identify planning constraints on the environmental and land use maps.

From the limited discussions about the substation, there appeared to be a consensus that any expansion or reinforcement should be done at an existing site, rather than establishing a completely new substation which would require more land.

2.1.2.4 - Local Area Concerned Citizens Meeting

Following the second public meeting in Aldergrove, a group of concerned citizens organized a community meeting to share information and concerns pertaining mainly to the intertie, and to listen to representatives of a group called Neighbors Opposed to Powerline Encroachment (NOPE). The meeting took place on November 15, 1989, and was attended by Hydro's Community Relations Coordinator who responded to public comments and questions when asked.

2.1.2.5 - Meeting with Sumas Prairie Residents

The Sumas Prairie farmers requested a meeting to receive information about the proposed intertie and substation and to present their comments and ideas. The meeting took place on November 24, 1989, in the Abbotsford Municipal Community Meeting Room.

The Consultant had met with one of the key members of the group prior to the meeting to provide background information, to obtain a phone contact list, and to discuss particular aspects of the project. Each person on the phone list was contacted by both the project team, and the person heading the group.

The meeting format was similar to the other public meetings where a presentation was made by the project team, followed by a discussion period and identification of potential issues and concerns. Approximately 80 local area residents attended the meeting, and expressed concern about any further loss of farmland in the Fraser Valley due to transmission line or substation development.

2.1.2.6 - Information Update Letter

A third set of meetings was planned for 1990 to present the results of the planning and public consultation studies once alternatives for the intertie and the substation had been determined. However, because of the interim period between the second and proposed third sets of public meetings, it was necessary to update the public on the status of the planning process. A letter was sent to each person on the mail list (approximately 500) identifying future planning and consultation steps, and committing to keeping participants informed of upcoming events.

2.1.2.7 - Planning Agency Meetings

After considerable planning and analysis, alternative intertie routes and substation sites were identified by the project team. Prior to finalizing these alternatives, members of the project team met with local and regional planning agencies in Abbotsford, Matsqui, and Langley, and the Agricultural Land Commission and the Greater Vancouver Regional District. These meetings took place during the week of June 04, 1990, with follow up discussions with the GVRD on August 21, 1990.

Members of the project team met with planning staff and used visual display materials to assist in outlining the results of the planning studies, and the alternative routes and substation sites. The planning agency meetings provided the project team with an indication of technical issues and concerns related to the alternative substation sites.

2.1.2.8 - Meetings with Local Governments

Based on the results of the planning and public consultation studies, and the planning agency meetings, the project team met with local government officials to inform them about the status of the two projects, and to identify and receive feedback on alternative intertie routes and substation sites.

Meetings were held on July 23, 1990, with the District of Abbotsford, July 30 with the Township of Langley, and August 14 with the District of Matsqui. The discussion which occurred at each meeting focused mainly on the intertie project, with little concern being expressed about the system reinforcement. There appeared to be agreement, however, that reinforcement should take place at an existing site such as Clayburn rather than establishing a new site.

2.1.2.9 - Project Newsletter - Second Issue

Following the selection of alternative substation sites, a second newsletter was developed to inform the public about the results of the planning studies. A second project newsletter was sent to approximately 30,000 households in the study area on July 21, 1990. The distribution had been increased from the first mail out to reflect the wide spread public interest in the intertie, and to ensure that all people and businesses within the study area received a copy. Following the first newsletter mail out, a number of residents stated they had not received the newsletter.

The newsletter summarized the planning and public consultation to date, and presented alternatives for transmission line tower design, potential intertie routes and alternative substation sites. It was noted that system reinforcement at the existing Clayburn substation appeared to be the most suitable location of all substation alternatives. A clip-out coupon and Hydro's toll free telephone number were also provided to allow the public to make comments and suggestions.

2.1.2.10 - Information to Property Owners, MLAs & MPs, Native Bands & the Mail List

Throughout the consultation process, the project team committed to keeping those

people on the mail list, including MLAs, MPs and native groups informed. Individual letters and a copy of the newsletter were sent to each person on the mail list at the same time that the newsletter was released.

2.1.2.11 - Meetings with Interest Groups & Property Owners

Once the intertie route and substation alternatives were identified and the general public informed via the newsletter, interest groups, land users and property owners in the vicinity of the more suitable alignments were contacted.

Members of the project team also met with the gravel pit operators, a residents' group in the vicinity of 248th and 16th Avenue, the Centennial Ratepayers Association in Abbotsford, Friends of the Fraser Valley, the Abbotsford Downtown Business Association and Jesse Farms. These meetings took place between July 23 and August 15, 1990, and served to outline the status of the planning studies and to identify potential concerns with the planning options.

System reinforcement did not appear to be a concern to any of these groups on the basis that it served domestic needs and that strong consideration would be given to reinforcement at Clayburn as opposed to establishing a new site.

2.1.2.12 - Completion of Phase 1

On August 23, 1990, B.C. Hydro decided to wind down the planning study for the intertie, because of an agreement reached between BPA, PSPL and B.C. Hydro. Everyone on B.C. Hydro's mail list was then notified by letter accompanied by copies of press releases issued by B.C. Hydro on August 23, 1990, and by PSPL and BPA on August 17, 1990.

2.1.3 Stage III - Documentation of Phase 1

2.1.3.1 - Phase 1 Report

Based on the methodology and the results of the consultation process, a comprehensive report was prepared outlining the public's response to the transmission line intertie. A separate process, referred to as Phase 2, was then initiated for completing public consultation on the system reinforcement alone.

2.2 Phase 2 - Public Consultation for Clayburn Substation

With the intertie-wound down, B.C. Hydro reassessed its alternatives with a specific focus on system reinforcement. This enabled B.C. Hydro to evaluate two other existing substations as alternatives to Clayburn. These included McLellan substation in Langley and Atchelitz substation near Chilliwack.

The analysis of the three alternative substation locations confirmed that reinforcement at Clayburn would be the most effective means of meeting anticipated demand for electricity in the South Fraser Valley. Although the comparative analysis of the three possible locations was presented to the public in Phase 2, public consultation focused on that area in the vicinity of the Clayburn substation. This was based on expressed support for substation expansion at Clayburn during Phase 1, and because the Phase 2 evaluation had determined that Clayburn would be a more suitable location than either McLellan or Atchelitz.

Phase 2 consultation in the Clayburn area involved the following activities:

2.2.1 Notification of Continued System Planning

As part of Phase 1, a letter had been sent to all people on the mail list on August 20, 1990. The letter identified that planning for system reinforcement in the Fraser Valley would continue despite cancellation of the intertie. No responses to the letter were received.

2.2.2 Clayburn Substation - Site Analysis

On November 07, 1990, members of the project team toured the substation area. The limits of site expansion were identified, together with the location of the Hydro transmission line right-of-way, the landfill area and proposed playing fields, and surrounding commercial operations. Nearby residential areas were also toured to identify homes within the vicinity for the project. This information was used to develop a mail list for distribution of Phase 2 information materials.

2.2.3 Meetings with Local Governments

On November 15, 1990, the project team met with the District of Matsqui, and the District of Abbotsford to provide information on substation reinforcement at Clayburn,

to obtain information on potential planning issues and to receive input on how public involvement should take place. Both Districts stated support of the project. Notes of the meetings are provided in Appendix C.

2.2.4 Development of a Phase 2 Mail List

To ensure that the public was aware of the system reinforcement project in the vicinity of the Clayburn substation, the project team developed a mail list. This included the names and addresses of all residents within the vicinity of the substation. it should be noted that the substation is buffered from most residences by vegetation and a reclaimed landfill site. There are no residents within approximately 300 meters of the substation.

2.2.5 Project Newsletter

To reacquaint the public with the project, and to focus planning specifically on the substation, a third project newsletter was developed. The newsletter contained detailed information on the need and options for the system reinforcement, as well as information on planning and construction schedules, environmental studies and public involvement. B.C. Hydro's toll free information number was provided, along with a comment form which could be returned to B.C. Hydro. Approximately 350 newsletters were distributed to the project area. Newsletters were also placed in the B.C. Hydro District Office in Abbotsford. A copy of the newsletter is presented in Appendix A.

2.2.6 Letters to Mail List, Media, and Government Representatives

To inform members of the public about the continued planning for the substation reinforcement, letters were sent to all residents on the Phase 2 mail list, as well as the media, local and regional government representatives, MLAs and MPs and Matsqui area Native organizations. The letters were accompanied by a copy of a newsletter which provided detailed information on the proposed system reinforcement. Letters were sent to individuals during the week of May 20, 1991. Examples of each letter type are included in Appendix B.

A copy of the newsletter was also sent to local governments in Langley and Chilliwack.

2.2.7 Press Advertisement

Shortly after the newsletter was sent, an advertisement was placed twice in local newspapers during the weeks of May 27 and June 03, 1991. The ad provided background information on the substation reinforcement and a map of the Clayburn substation area. A clip out form and B.C. Hydro's toll free information telephone number were provided for the public to express their public views on the project in writing or by calling B.C. Hydro.

The advertisement was placed in the Abbotsford-Clearbrook Times, Abbotsford, Sumas and Matsqui News, the Aldergrove Star, the Langley Times, and the Langley Advance, which have a combined circulation of 123,000 residents. A copy of the ad and insert dates is presented in Appendix D.

Response to the advertisement and the newsletter distribution was minimal, with only 28 public inquiries being registered.

2.2.8 Press Interview

Following the distribution of media information kits, the Project Manager was interviewed for a Public Affairs radio program broadcast in the Abbotsford-Matsqui area. The interview included a discussion of the substation project and other general B.C. Hydro-related issues such as electric and magnetic field effects.

2.2.9 Contact with the Public

To determine the level of public interest in the substation reinforcement, the project team contacted ratepayers associations, land users, stakeholders and residents in the vicinity of the substation who could potentially have concerns.

The Centennial Ratepayers Association, contacted by phone, expressed strong concerns about the construction of new transmission lines, but had no specific concerns with the Clayburn expansion proposal. Notes of the discussion are presented in Appendix C. The association did not respond to B.C. Hydro's offer of a meeting to further discuss the Clayburn proposal.

Because attempts to contact the Terry Fox Ratepayers Association by phone were unsuccessful, B.C. Hydro mailed a letter and project information. The letter invited the association to contact B.C. Hydro if a meeting or further information was desired. No response was received.

Telephone discussions were initiated with the operators of the Matsqui Recycling Depot and the Greater Vancouver Regional District Transfer Station. Neither had concerns with the Clayburn proposal. Notes of these discussions are included in Appendix C.

During the weeks of June 10 and 17, 1991, two members of the project team canvassed the area around the substation, focussing on residences backing onto MacLure Road - adjacent to the substation - to measure public interest. Forty households were contacted directly to ensure that they had received project information, and to determine if there were any outstanding issues or concerns.

Several residents stated that they had not received the mailout. The project team described the proposal, pointed out where the proposed structures would be located in the right-of-way, and left project and contact information in case additional questions or concerns arose. No further inquiries were received. Of the residents contacted, 75% (30 residents) either had no concerns, or felt their concerns were addressed with additional information. Seven residents expressed concerns with EMF effects, property values, visual impacts, and possible future transmission line construction. A summary of the door-to-door canvass is provided on Page 26, and an analysis of the issues on Page 28.

2.2.10 Documentation of Phase 2

During April and May, 1991, approximately 350 members of the public in the vicinity of Clayburn substation had been notified directly about the substation reinforcement project. All local and regional governments, MLAs and MPs, and Matsqui area native bands had been contacted and informed. The advertisement, placed twice in five newspapers, reached a combined circulation of approximately 123,000. Response to these initiatives was extremely low, particularly given the high level of awareness and interest in the intertie project and the public involvement program which took place

approximately one year ago. Based on the low level of expressed interest in the substation expansion at Clayburn, the project team concluded that there was not significant public concern and that further consultation initiatives (e.g. public meetings) were not warranted at the time.

3.0 Analysis of Public Response to Substation Reinforcement

3.1 Phase 1 - Public Response

The system reinforcement project was presented to the public at the same time as the intertie because of the similar geographic location of the two projects, and their possible technical relationship. Information about the system reinforcement was presented in all public information materials and as part of meetings with government agencies, interest groups and the general public. Although the intertie remained the focus of public attention, at each public forum the question as to whether or not people were concerned about the need for the substation, the selection of a suitable site, and how the substation should be planned was purposely asked.

Public reaction to the substation project was minimal and substantially different to the high level of interest in the transmission line intertie. This may have been due to the public distinguishing between the substation project to serve domestic needs, and the intertie which was perceived to serve United States interests. System reinforcement was also more likely to be supported based on the need for additional transmission capacity in the Fraser Valley as a result of new population growth and development.

Another factor may have been the public's response to selecting a new alignment for the intertie and hence potential social and environmental impacts, compared to the perception that the expansion of Clayburn substation has been planned for some time and the land acquired in 1979.

3.1.1 Substation Planning

A) Analysis of Site Alternatives

With the decision to wind down planning studies for the intertie, B.C. Hydro reassessed the alternatives with a specific focus on system reinforcement. This resulted in two other existing substations - McLellan substation in Langley and Atchelitz substation near Chilliwack being evaluated in addition to Clayburn. Public

response to the alternative substation locations suggested that there is public preference and support for placing the system reinforcement at Clayburn:

- Throughout the public involvement process, there was general consensus that system reinforcement should occur at Clayburn substation. This preference was based on the fact that the site is already developed and sized for the expansion

- Public reaction focused mainly on the intertie, and less on the switching station and system reinforcement. Opposition to the intertie and any ancillary facilities could be interpreted as opposition to any new plans for expansion along the existing corridor

- There was a definite preference by the Agricultural Land Commission and Sumas Prairie residents and farmers not to use productive farmland for any aspect of the intertie and substation project. This would negate substation expansion alternative locations 4 and 5 (both east of Abbotsford). Their preference, stated at the stakeholder meetings on November 24, 1989 and June 8, 1990, was to expand the existing Clayburn substation, with the second alternative to place the intertie and the substation in the gravel pit area

- Local and regional governments stated a preference for expanding the existing substation site at Clayburn

- Response at public meetings and in discussions with interest groups tended to favor development of the existing substation site at Clayburn. This was identified in the July 25, 1990 meeting with the Friends of the Fraser Valley, the August 15, 1990 meeting with the Centennial Ratepayers and at public meetings, for example, the October 24, 1990 meeting in Aldergrove

- A comparative analysis of Clayburn, McLellan and Atchelitz substations determined that reinforcement of the 230 kV substation at Clayburn appeared to be most effective in meeting anticipated demand for electricity.

B) Impact to Surrounding Land Use

Although land for the substation at Clayburn was acquired in 1979, a variety of developments have occurred in the area. These include residential development to the south and west, proposed future development of soccer fields to the south and industrial development along the highway corridor to the east.

The proposed soccer fields are partially located on the Hydro right-of-way and would be crossed by transmission lines connecting the east-west transmission lines to the expanded substation. However, in discussions with the District of Matsqui, it was noted that the site is a low priority for recreation development and that system reinforcement is not likely to be a concern. The project team also noted that, where possible, the playing field area would be avoided when determining tower locations.

C) Substation Design

During the public consultation process, a few comments were made regarding the size of the substation expansion, its visual impact, and how it would be screened and protected from public view and access. These questions were asked more out of interest and in anticipation that they would be considered in the substation design, rather than as a topic of public concern.

3.1.2 Local Government Response

Both the Districts of Matsqui and Abbotsford supported the reinforcement project at Clayburn substation. It was agreed that there is a demand and need for additional transmission capabilities in the area from increasing population growth and development. The project team committed to keeping the Districts informed about ongoing planning and public involvement for the substation reinforcement.

3.1.3 Summary of Public Response - Phase 1

The system reinforcement appeared to be a relatively minor concern of participants involved in the public consultation program. This may have been due to concern focusing on the intertie, or possibly because the substation expansion has been planned for some time and is a response to domestic needs. The public response tended to favor the existing Clayburn substation as the site for future expansion.

3.2 Phase 2 - Public Response

Phase 2 public involvement focused on the alternatives for system reinforcement with specific emphasis on the proposed expansion of Clayburn substation. Overall, public response to the advertising and mailout was minimal. Due to the low response, the project team initiated a door-to-door canvass of residents in the area to provide another opportunity for the public to express their interest or concerns. The results of the Phase 2 initiatives are described as follows.

3.2.1 Advertisements

The ads placed in Matsqui, Abbotsford, Langley and Aldergrove newspapers, which have a combined circulation of 123,000, yielded only 13 inquiries through the B.C. Hydro Public Information Request System. An additional 15 inquiries were received from other sources, primarily in response to the mailout of project information. The inquiries were primarily requests for additional project information or clarification about whether the project involved new transmission lines, increased voltage to existing lines or incremental EMF effects.

The distribution of PIRs received from the region is shown in the table below:

Table 1 - Public Information Requests by Geographic Area

Location	Mailout	Ads	Other	Area Total
Clayburn Area of Matsqui	10			10
Other areas of Matsqui/ Abbotsford		9		9
Langley/Aldergrove		4	1	5
Other		2	2	4
Total	**10**	**15**	**3**	**28**

A discussion of the issues identified through the PIR system, along with B.C. Hydro's response, are summarized in the section on Public Issues and Concerns.

Table 2 - Public Information Requests by Topic

Location	No. of Public Information Requests by Topic*				
	Information Only	Property Values	EMF	Visual Impact	Transmission Lines
Clayburn vicinity	4	2	3	1	
Matsqui/ Abbotsford	7		2		3
Langley/ Aldergrove	5				1
Other	2				
Total	**18**	**2**	**5**	**1**	**4**

*** In some cases, a PIR included more than one topic.**

3.2.2 Mailout of Project Information

The direct mailout to 350 Clayburn substation area residents also resulted in a low response. Ten PIRs were received in response to the mailout, representing a response rate of approximately 3%. Included were questions and concerns about property values, visual impacts, and EMF effects.

Members of the project team responded by phone or mail to each Public Information Request.

3.2.3 Door-to-Door Canvass

The door-to-door canvass was directed at residents who might be most affected by expansion at Clayburn because of physical or visual proximity, and would therefore have a greater interest in the project. Residences in the 33000 block of Wren Crescent were selected because they back onto MacLure Road approximately 400 meters south of the right-of-way. Residences with varying degrees of view of the site from Babich Street and Babich Place were also contacted, along with a sample of homes in other areas.

The purpose of the canvass was threefold:

- to provide an additional opportunity for public input into the system reinforcement
- to provide additional information to assist residents in the understanding of the project
- to respond to questions and concerns.

Table 3 shows that in the case of 75% of the residents contacted, either no concerns were expressed or concerns appeared to be offset once additional project information was provided. Of the forty residents contacted, three people had some reservations but indicated they could accept the project. In the four cases where no adult was at home, project and contact information were left but no further response was received. Four people remained opposed to the project based on their concerns with a potential decline in property values and view, health risks associated with EMF, and possible transmission line construction in the future.

Table 3 - Summary of Door-to-Door Canvass of Residents in Vicinity of Clayburn Substation

Level of Concern	Number of Household Responses
No concerns expressed with project	23
Initial concerns appeared to be addressed with additional information	7
Some concerns with property values, EMF, and visual impacts	3
Opposed to project due to concerns with visual impacts, property values, and EMF	4
No adult available to discuss project; project and contact information left at residence	3
Total	**40**

Several people commented that they had been confused by the orientation of the sketch in the project news brief, which looked south over the substation site. The sketch had been based on a photograph of the site used for planning purposes. Once a project team member pointed out the proposed location of the various substation structures relative to other landmarks at the site, the confusion appeared to be resolved.

As a result of responding to PIRs, it was identified that two residents had initiated a petition opposing the project. The project team discussed the petition organizers' concerns over the phone and during two personal visits. In addition, the project manager wrote to address the petition spokesperson's concerns about the height of towers, public information materials, and visual impacts. The letter also offered a further meeting with B.C. Hydro representatives. In total, offers of meetings were made six times. However, the offers were not accepted, nor did B.C. Hydro receive a petition.

3.2.4 Response from Government

Letters and project information sent to fourteen Fraser Valley MPs, MLAs, local and regional governments resulted in three responses. One response was from an MLA who wrote in support of the project and the other two were from a Regional District and a Municipality which wrote that, because the project did not affect their jurisdiction, they had no specific concerns.

The District of Matsqui Planning and Public Works Departments indicated support for the Clayburn proposal during a meeting with the Project Team in November, 1990. A follow-up telephone conversation with the Mayor's office confirmed that there were no concerns. Ongoing contact was maintained with the Planning Department throughout the public consultation program.

3.2.5 Response from Native Organizations

The mailout of a letter and project information to four Matsqui area Tribal Councils and Bands was followed up by a phone call to ask whether there were any questions or concerns. The Native organizations stated that they had no immediate concerns but that they appreciated being informed of the project.

4.0 Public Issues and Concerns

4.1 Electric and Magnetic Field Effects (EMF)

Several residents in the Clayburn area expressed concern that the project could result in increased health risks to residents living in the vicinity of the substation and transmission corridor due to higher EMF levels. Some of this concern was based on the misconception that the project involved construction of a new transmission line through the Fraser Valley, or an increase in voltage to an existing line. Where this misconception was encountered, it was addressed directly by the project team.

The project team responded that any measurable changes to EMF levels would be confined to the substation right-of-way, a minimum of 300 meters from the nearest residence and that the main transmission corridor would not be affected. Contact and general information about EMF was also provided. While there are still general concerns about the possible health effects of EMF, residents appeared to understand that substation expansion would not result in increased EMF levels in residential areas adjacent to the substation and the transmission corridor.

4.2 Property Values

Approximately six residents expressed concern that the system expansion would lead to a decline in the market value of their property, owing to perceptions of negative visual impacts and potential health effects associated with transmission projects. While acknowledging this concern, the project team also noted that isolating the effects of substation expansion on property values would be difficult given existing industrial land in and adjacent to the right-of-way, including the landfill, the existing substation, the GVRD Transfer Station, and Matsqui Recycling Depot.

4.3 Visual Impacts

Incremental visual impacts from the substation expansion appeared to be of minor concern. In discussions with approximately 30 residents with varying degrees of view of the site, the issue was raised approximately five times. Several residents stated that

because they already look at a number of other industrial activities in and adjacent to the right-of-way, the view of additional substation and tower structures would not likely make a significant difference.

Two people concerned with visual impacts suggested that B.C. Hydro should look at options for screening the substation. The project team advised that feasible suggestions for screening will be considered as part of the substation design process.

4.4 Additional Transmission Lines

Concern was expressed on approximately five occasions that another purpose of the substation was to facilitate a transmission line intertie to the United States or additional transmission to the Lower Mainland. The intertie was associated with planning studies conducted for the PSPL proposal, which had included a route option originating from Clayburn substation. The project team explained that with the suspension of the PSPL studies, B.C. Hydro had no current plans for a transmission interconnection to the U.S. through the Fraser Valley. It was also explained that any new proposal would be the subject of a thorough and intensive planning process and regulatory review.

4.5 Other Concerns

One participant expressed skepticism that the public's concerns and ideas would be considered by B.C. Hydro. The participant stated his belief that B.C. Hydro had fast-tracked the consultation process, leaving insufficient time for public response.

The project team responded by noting that public consultations regarding substation reinforcement had been ongoing since 1989, including a special focus on the area in the vicinity of Clayburn substation during the spring of 1991. It was further explained that, while not all individual concerns may be satisfied, the process is designed to seek and incorporate public concerns as much as possible. The resident was advised that project updates would be provided to those on the mail list and additional input would be welcomed at any time.

4.6 Conclusions

The public involvement process for system reinforcement took place over a two year period, initially as part of consultations for the proposed PSPL intertie. Public interest in the intertie was high, and may have overshadowed interest in system reinforcement, to which little public response was received. Accordingly, planning and site selection for the substation continued after the intertie project was cancelled, and involved identifying specific public interests in the proposed Clayburn expansion.

During the course of the public consultation program, five public meetings were held, involving discussions about the intertie and system reinforcement projects. Meetings were attended by over 350 people, and the project team met with representatives of interest groups, government, and local business. Three newsletters were developed, with each providing greater detail on the planning study and the selection of a suitable site for system reinforcement. Project information was mailed to approximately 350 property owners in the vicinity of Clayburn substation and the project team contacted 40 residents directly during a door-to-door canvass.

Given the extent of the consultation process, there was ample opportunity for the public to express their views and ideas about the system reinforcement project. By far, the majority of public interest focused on the intertie, with minimal interest in the system reinforcement project, even in the vicinity of Clayburn substation. The majority of participants appeared to support the project based on the need to reinforce the transmission system in order to meet future electricity demand in the Fraser Valley.

5.0 Additional Public Consultation Steps

The public consultation program provided the opportunity for public input to be incorporated into the planning and decision-making processes for system reinforcement. As the decision making and application process progress, it will be necessary to keep the public informed and updated. Specific steps anticipated include:

1. **Keeping the public informed about the Application process.**
   A press release and correspondence should be issued to inform the public that an application has been submitted to the regulatory authorities. Correspondence to elected officials and people on the mail list may also include a summary of the public consultation results.

2. **Providing updates on the project's status.**
   If the project is approved, periodic news releases and correspondence may be used to keep the public up to date with project planning, construction and implementation steps. New residents and elected officials in the area would also be made aware of the project through this step. An announcement of the substation going into service may be framed in the broader context of "Electricity Choices" planning and consultation initiatives.

3. **Continuing opportunities for input.**
   Maintaining the toll free information line and responding to inquiries will provide an opportunity for continued public input to help ease project implementation. Additional input on detailed project planning issues will be obtained through community liaison with B.C. Hydro's Public Affairs Coordinator and through the ongoing correspondence and public information.

B.C. Hydro will maintain ongoing communications with communities in the study area through the Public Affairs Coordinator. The "Electricity Choices" program, a new B.C. Hydro initiative designed to involve Lower Mainland communities in planning ways to meet their future electricity needs, will also involve the public in the Fraser Valley.

Appendices*

Appendix A - Project Newsletters and Information Sheets

Appendix B - Correspondence

Appendix C - Notes of Meetings

Appendix D - Press Releases and Advertisements

***The appendices include information materials from Phase 2 of the Fraser Valley System Reinforcement Project. Detailed appendices for Phase 1 can be found in the report titled**
B.C. Hydro - Fraser Valley Substation Reinforcement and PSPL Intertie - Phase 1 Public Consultation Program

Appendix A

Project Newsletters and Information Sheets

BC hydro

FRASER VALLEY SUBSTATION AND PUGET SOUND POWER & LIGHT INTERTIE

PROJECT NEWSLETTER

Vol. 1 No. 1 October 18, 1989

New projects for the Fraser Valley

The growing demand for energy has prompted a study for a new 500 kV (kilovolt) substation to provide electrical energy to developing areas in the Fraser Valley.

A second study for the region concerns a transmission line from the existing corridor, south to the United States border to connect to a transmission line being considered by the Puget Sound Power & Light Company (PSPL) of Spokane, Washington.

B.C. Hydro currently operates a high voltage transmission line corridor through the Fraser Valley. The corridor has two 500 kV transmission lines and one 230 kV line. The two 500 kV lines carry electricity to the Lower Mainland while the 230 kV line serves the Fraser Valley. The Clayburn 230 kV Substation, located in Abbotsford, distributes electricity to customers in the Abbotsford, Matsqui and Aldergrove areas.The two new projects are being addressed together because of the need for a substation or, alternatively, a switching station for the transmission line.

This newsletter has been developed by B.C. Hydro to provide general information about the proposed new substation and the transmission line. It is one of the first steps in the public consultation program, and will be followed by public meetings in October, November and December.

Benefits from power exporting

The new transmission line would allow Hydro's subsidiary, Powerex, to sell electrical energy generated by the private sector directly to PSPL.

In addition, during high water periods, excess generating capacity exists at Hydro dams. This potential power can either be spilled through the dams, or sold as export to neighbouring utilities. B.C. Hydro has been selling electricity to the United States on a "non-firm" basis for the past 20 years, the income from which is used to offset rate increases to Hydro customers.

B.C. Hydro retains the responsibility for the transmission systems used to transport the electricity produced by Independent Power Producers (IPPs) to export markets.

The sale of electricity means long term benefits to the province and allows neighbouring utilities to pool resources to improve operating economies.

Two projects described

Fraser Valley Substation

The Abbotsford and Aldergrove areas are currently served by the Clayburn Substation located just north of Abbotsford. Growing demand for electrical energy in the Fraser Valley indicates the need for a new 500 kV substation in the area, either by expanding the Clayburn 230 kV Substation or building a new substation along the existing transmission line corridor.

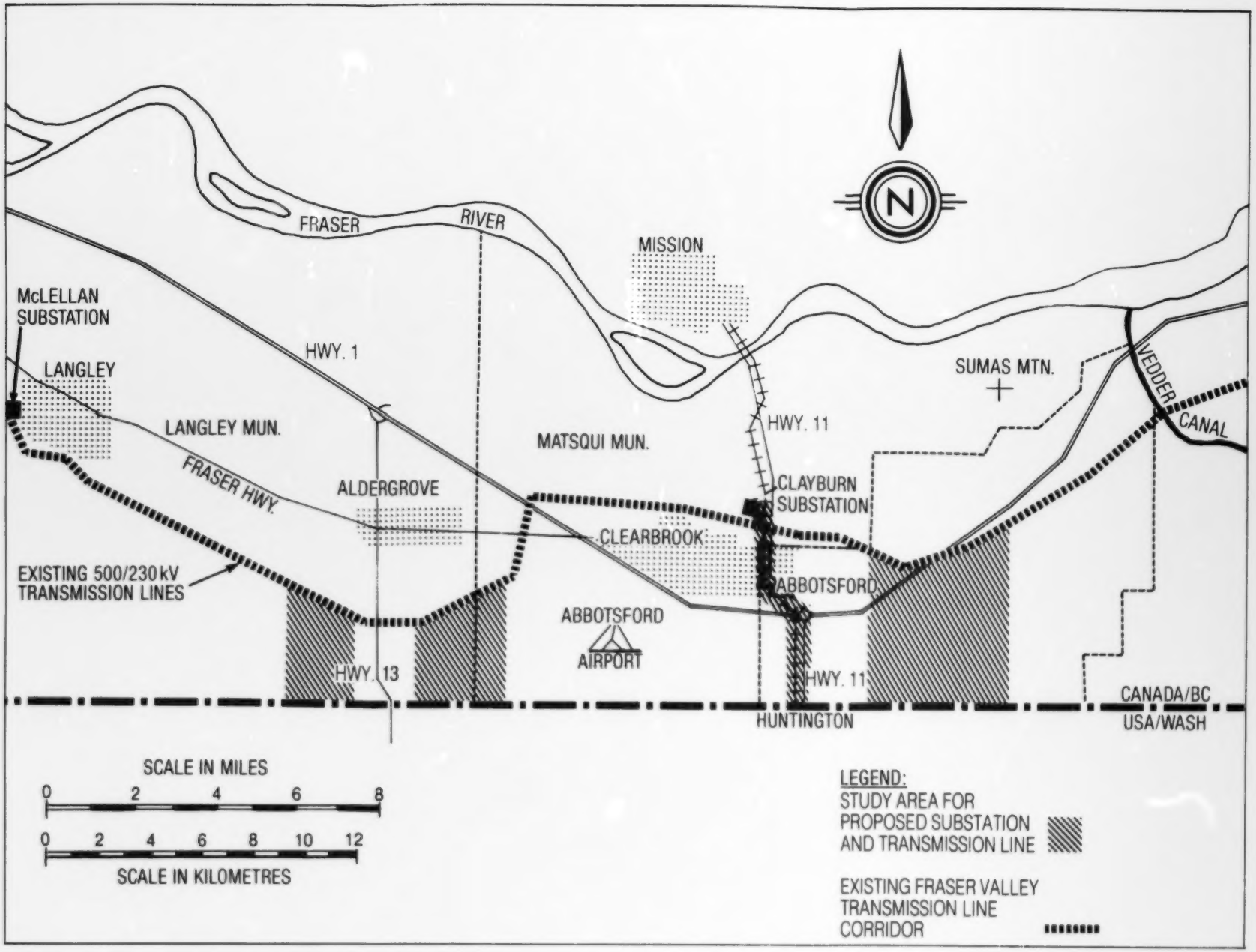
A new substation would require approximately 12 hectares (30 acres) of land. The existing Clayburn Substation is already sized for this expansion. However, alternative sites within the existing transmission line right of way would also be evaluated, although such sites would require acquisition of land.

Transmission Line Intertie

The intertie would require construction of a transmission line originating at a point on the existing 500 /230 kV line that currently provides electrical energy to residents in the Fraser Valley and the Lower Mainland. The location for the line would be determined only after social, economic, environmental and technical studies are completed, including consultation with the public.

The new line would consist of two 230 kV circuits, each with a capacity to transmit up to 800 megawatts of electricity. However, initially only a small portion of this capacity could be purchased by PSPL, but the excess capacity would help to reduce energy loss along the line and it could allow additional electricity to be transported on the line in the future.

To support the transmission line, a switching station or a substation would be required at a point where the line connects to the existing east-west transmission line corridor. The type of station required would depend on whether the route selected is east or west of Abbotsford, because of the technical configuration of the existing transmission system.


N
FRASER RIVER
MISSION
McLELLAN SUBSTATION
HWY. 1
LANGLEY
LANGLEY MUN.
FRASER HWY.
ALDERGROVE
MATSQUI MUN.
HWY. 11
SUMAS MTN.
VEDDER CANAL
CLAYBURN SUBSTATION
CLEARBROOK
ABBOTSFORD
EXISTING 500/230 kV TRANSMISSION LINES
ABBOTSFORD AIRPORT
HWY. 13
HWY. 11
CANADA/BC
USA/WASH
HUNTINGTON
SCALE IN MILES
0 2 4 6 8
0 2 4 6 8 10 12
SCALE IN KILOMETRES
LEGEND:
STUDY AREA FOR PROPOSED SUBSTATION AND TRANSMISSION LINE
EXISTING FRASER VALLEY TRANSMISSION LINE CORRIDOR

Regulatory approvals

Regulatory approval by the Government of Canada is required for the construction and operation of the intertie transmission line and for the export of electricity. Hydro must also apply to the B.C. Ministry of Energy, Mines and Petroleum Resources and to the B.C. Utilities Commission for regulatory approval.

Puget Sound Power & Light has submitted an initial application to the appropriate American authorities for regulatory approval.

If Canadian and American regulatory authorities approve the project, construction of the transmission line along the selected route could then proceed.

If the proposed 500/230 kV substation is used as the connection point for the new intertie line, it would then require approval as part of the project. If, however, the proposed substation is not used as the connection point for the intertie line, separate application for its construction will be made only to the provincial regulatory authorities.

Anticipated schedule

B.C. Hydro has completed the initial feasibility studies on the new substation and the transmission line intertie, and is now proceeding with a more comprehensive planning and development study. Applications for regulatory approvals are planned for the spring of 1990. Assuming approval is granted, construction of the substation and the transmission line would then proceed with a project in-service date of 1993. The project schedule is outlined below:

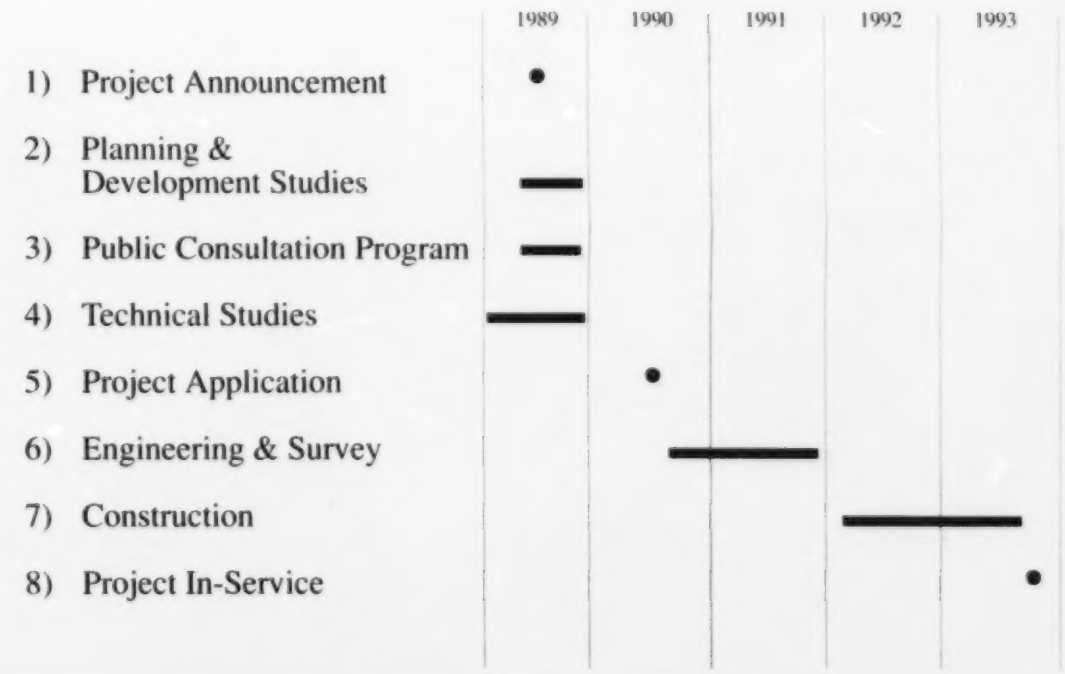
Public will help to select route

A preliminary analysis of the study area (see map) has been completed by B.C. Hydro to identify potential land use concerns and constraints. However, alternative routes have not been selected and Hydro is proposing to work closely with local governments, interest groups and the public to identify possible issues and concerns that must be addressed as part of the route selection process. The public will play a direct role in developing criteria for route selection.

The map shows four general north-south corridors from the existing 500/230 kV line to the U.S. border, including:

- between 240th Street and 264th Street in Langley;
- between 272nd Street and 288th Street in Langley;
- the existing railroad right-of-way west of Hwy #11;
- the area east of Hwy #11.

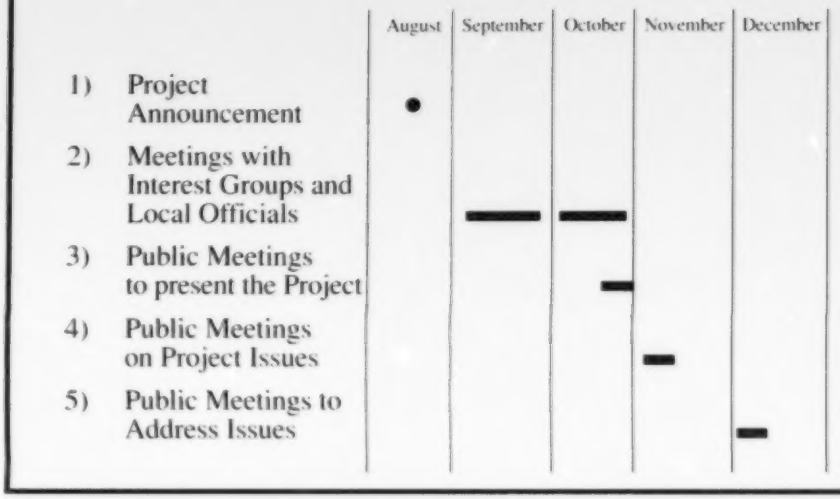
Project Schedule



Public consultation program explained

B.C. Hydro is committed to public consultation in all phases of a project from the initial planning and development studies to construction and ongoing operations. The public consultation process began in October with the distribution of project information to residents in the area. Discussions and interviews with interest groups and local governments will also occur in September and October to collect social, land use and environmental information. Public meetings will be held during October, November and December to hear comments and to respond to questions and concerns about the proposed substation and the transmission line.

Key steps in the public consultation process include:



All public meetings will be advertised in the local media one week in advance. However, individuals can be kept informed by placing their name on B.C. Hydro's project mail list by completing the form below.

Presenting Your Ideas

You can present your ideas and comments on the project at public meetings to be held in October, November and December or by writing to B.C. Hydro. To be sure that you are kept up-to-date on the project or to present your comments in writing, please fill out the form below and send it to:

Manager, External Relations
B.C. Hydro
970 Burrard Street
Vancouver, B.C. V6Z 1Y3

I would like to be included on the Fraser Valley Substation/P.S.P.L. project mailing list.

Name _____ Phone # _____

Address _____

City _____ Postal Code _____

Affiliation (if any) _____

I would like more information on:

_____ _____

_____

If you would like more information on this or other Hydro projects, please call:

Toll Free: 1-800-663-1377. In the Lower Mainland, call: 663-3614

BC hydro

Fraser Valley Substation and Puget Sound Power and Light Intertie

PROJECT NEWSLETTER

No. 2 July 1990

Phase one of B.C. Hydro study now complete

Last September we initiated studies on the Fraser Valley Substation and Puget Sound Power and Light Intertie project in the Aldergrove-Abbotsford-Matsqui area of the Fraser Valley. The two components of this project are the reinforcement of the substation facilities to meet increasing demand for electricity in the area, and a transmission line intertie which could provide the means to directly exchange electricity with Puget Sound Power & Light (PSPL) in Washington State.

Members of the public expressed a high degree of interest in the first phase of the project studies. Over 300 local residents attended the two sets of meetings B.C. Hydro hosted in the area.

Jeff Barker, Project Manager

In addition to ongoing public consultation, a variety of technical, environmental and socio-economic studies were completed during phase one. Through the studies, we were able to identify six possible routes for a double circuit 230 kilovolt transmission line, varying from three to nine kilometres in length. We also identified five potential locations for a substation site.

Based on environmental and technical criteria, two of the transmission line routes appear to be the best candidates for further detailed studies. One of the routes (referred to as route 3), runs through existing gravel pits, east of Lefeuvre Road. The other route (referred to as route 4), follows the railway track south from the existing Clayburn substation to the U.S. border.

With regard to the substation reinforcement, the option which appears most favourable is to upgrade the existing Clayburn substation by connecting it to one of the 500 kV transmission lines running in a corridor through the Fraser Valley. The station facilities required for an intertie on route 4 could also be located at Clayburn, while a smaller station could be required for route 3 where it intersects the corridor running through the valley. This would result in the least environmental impacts as well as being the most compatible with local community needs.

These options (and the studies carried out on them), along with the other options identified during phase one, are discussed in this newsletter.

Phase two of the study involves further investigation of route and station alternatives. Feedback on the results of the studies and public consultation to date, as described in this newsletter, will form an important part of that investigation.

Narrowing the Options

Planning for a transmission line or a substation usually involves a number of different disciplines. The Fraser Valley-PSPL study is no exception. There are civil engineers and electrical engineers on the team, and also a variety of environmental and other resource experts.

When we came to you in October last year we had identified only general areas where the transmission lines might run and substations be located. The reason for this was that we wanted to gather as much information as possible before attempting to identify any specific route alignments. Narrowing down the general options is a long process, involving many people and numerous detailed studies, including public consultation.

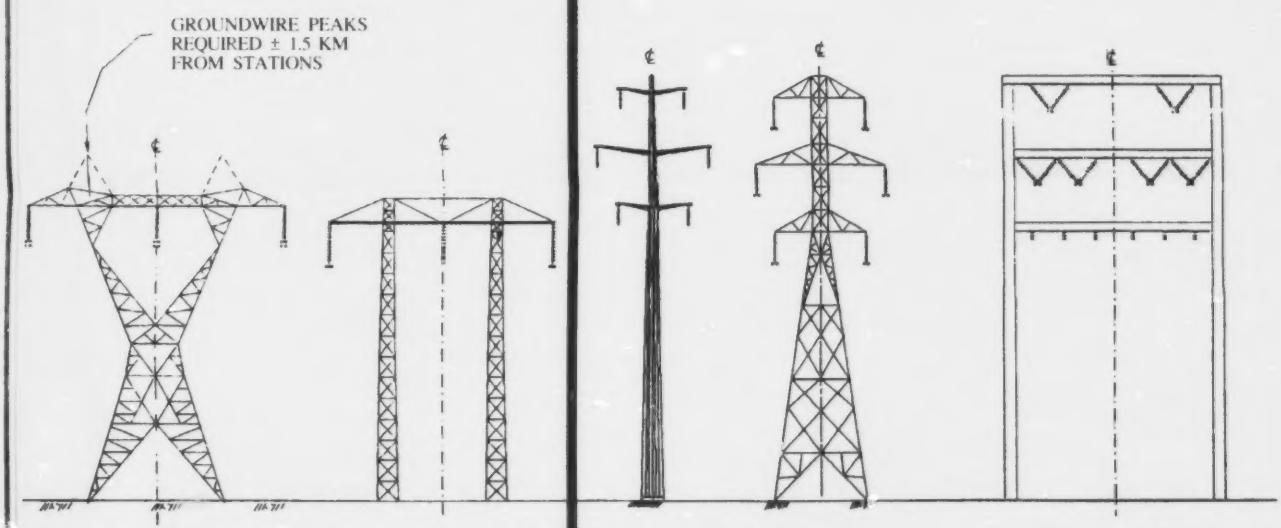
We began by identifying two broad study areas, through which a number of possible transmission routes and substations could be located. The western study area is within the Districts of Langley and Matsqui. The eastern study area is within the Districts of Matsqui and Abbotsford.

We then evaluated these study areas based on criteria such as land status and use, water use, vegetation, wildlife, fisheries, heritage, visual and recreational values and socio-economic criteria. From these studies it appeared that there were viable routes in both of the broader study areas.

This process resulted in the identification of three transmission line intertie route alternatives in each study area, as well as five possible substation sites in total. The transmission interties varied in length from three to nine kilometres. On some of the routes more than one possible specific route alignment was identified.

A summary map on these options is included on pages four and five.

Outlines of Existing Structures and Some Examples of Structures Which Could Be Used on the New Intertie


GROUNDWIRE PEAKS REQUIRED ± 1.5 KM FROM STATIONS
500 kV STEEL LATTICE TOWER PROPOSED FOR CLAYBURN 500 kV LOOP
230 kV STEEL LATTICE PORTAL
230 kV DOUBLE CIRCUIT STEEL POLE
230 kV LATTICE STEEL TOWER
PSPL RAIL ROUTE 230 kV/69 kV DOUBLE CIRCUIT STRUCTURE
EXISTING
ADDITIONAL INTERTIE OPTIONS

Why is the project being studied?

During the next two years the population of the Lower Fraser Valley is expected to increase significantly. To meet this growing need for new homes and businesses in the Fraser Valley, B.C. Hydro needs to provide additional electrical capacity in the area, by reinforcing substation facilities. Electrical equipment comprising this reinforcement could include a 500/230 kV transformer. There could also be a direct connection from the location of the substation reinforcement to one of the 500 kV lines which currently run through the Fraser Valley.

In addition to reinforcing substation facilities, B.C. Hydro is investigating improved access to the south. Such access could be improved through an upgrade to existing Bonneville Power Authority lines or through a transmission intertie directly with Puget Sound Power and Light (PSPL) in Washington State.

Although no final agreements have been made between B.C. Hydro and PSPL, the exchange of electricity has significant advantages.

The intertie could provide a direct interconnection with PSPL and could allow for greater coordination in planning and utilization of our electricity resources. It could provide another alternative to the Bonneville Power Administration (BPA) transmission system for the exchange of electricity with PSPL. Currently any exchange of electricity between B.C. Hydro and PSPL must be routed over transmission lines owned and operated by BPA. Access to these lines has not been available to date without a monopoly charge by BPA for transmitting the electricity over their transmission lines. Alternatives to reach southern markets are required and continue to be investigated to provide competitive access to markets. The intertie under study could provide such an alternative to upgrading the existing BPA lines.

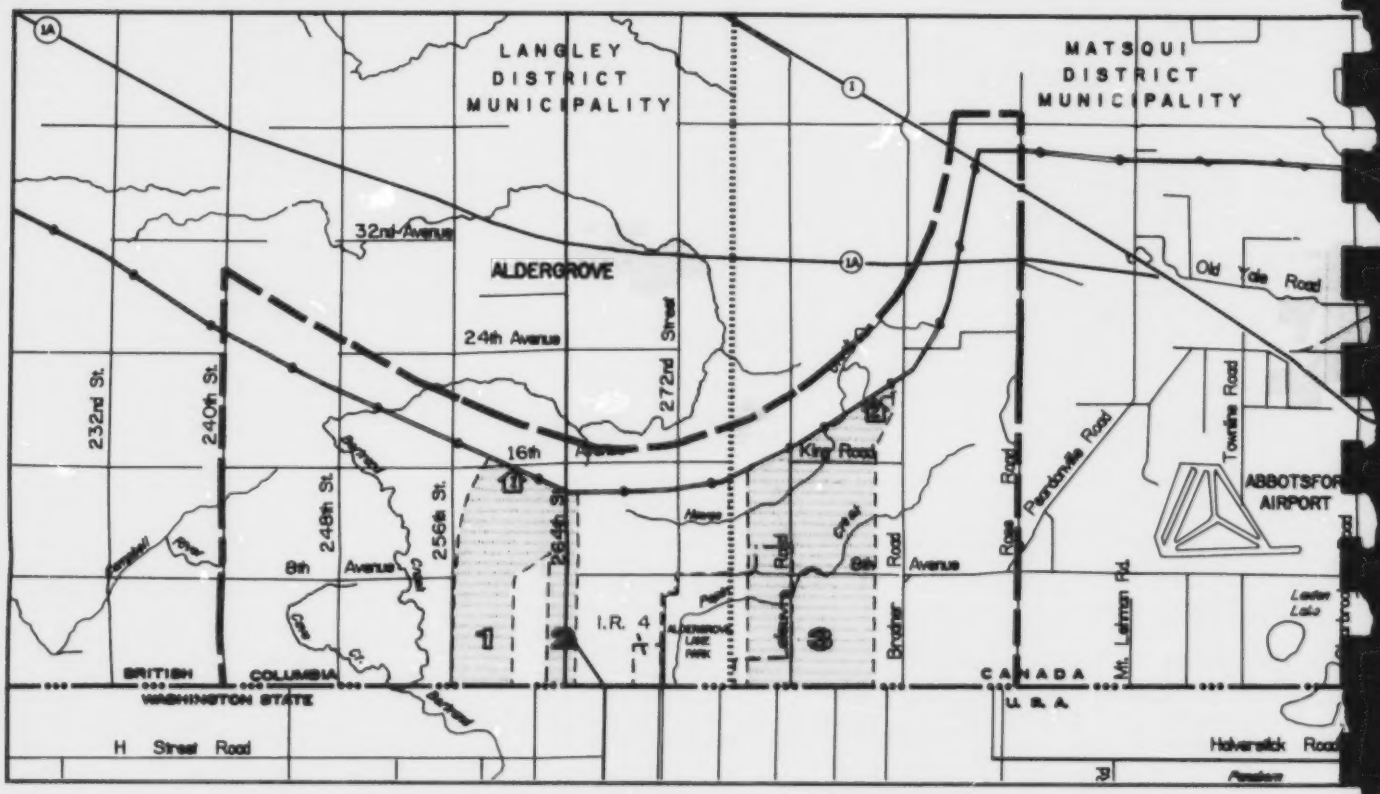
Interconnections between utilities on the west coast of North America have several benefits. One such example of an interconnection benefit occurred after the San Francisco earthquake in October last year, when we were able to send electricity to Pacific Gas and Electric in California. We also purchased electricity from the U.S. last year when a transmission line into the Fraser Valley and Vancouver area was out of service because of a snow avalanche.

Secondly, trade in surplus electricity is financially beneficial to B.C. as a whole. On average over the past 5 years revenues from the sale of surplus energy from the B.C. Hydro system have averaged $164 million per year.

Thirdly, in addition to trade in surplus energy there is also the possibility of selling the production of private producers (IPP's Independent Power Producers) to out of province customers. In this case the power could be transported over B.C. Hydro lines at a profitable rate to B.C. Hydro. Benefits could also accrue to Hydro through profits made by POWEREX, the export arm of the corporation. Such possible deals are being investigated now.

The intertie under study could be used to realize any or all of these benefits.

Gravel Pits found in the Environs of Route 3



A summary of the options

Substation Sites

All the substation options (except for Clayburn) are located along the existing transmission line corridor, which runs through the Fraser Valley. There are a number of options for the station facilities These are:

Sites 1 and 2

a) facilities for both substation reinforcement and supply to the intertie could be located at these sites;

b) facilities for station reinforcement could be located at Clayburn with station facilities to serve the intertie at sites 1 and 2.

Site 3 (Clayburn)

Both station reinforcement and facilities to serve the intertie could be located here.

Sites 4 and 5

Due to electrical system requirements, both station reinforcement and facilities to serve the intertie could be located at sites 4 and 5.

Route and Substation Alternatives

Route 1

This route runs south from the existing transmission line corridor to the United States border. It is located between 256th and 264th streets and includes two possible alignments (not shown on this map), both of which are three kilometres long. This is an area where there are many small properties as well as a woodlot.

Route 2

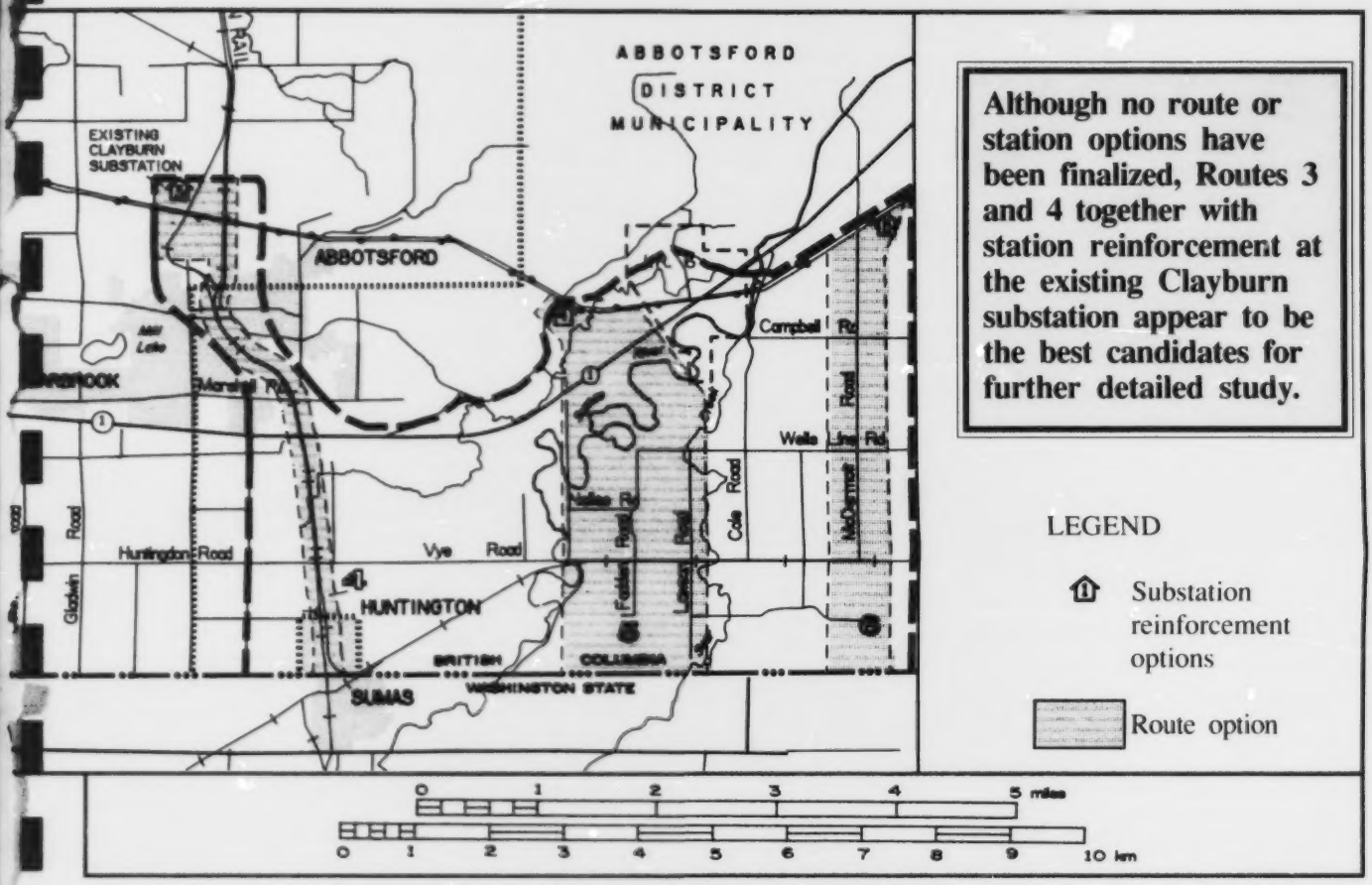
This is the underground transmission line (cable) option. There is only one alignment in this route and it is 3.2 kilometres long. It runs south from the existing transmission corridor to the border along both sides of 264th street.

Site 1

This site could serve both routes 1 and 2. The majority of the site is not cleared for agriculture and vegetation is mixed native grass and shrub. Its development may have an impact on wildlife due to loss of habitat, as well as some visual impact.

Route 3

Although not shown on this map there are four alignments in the vicinity of Lefeuvre and Bradner roads, which vary in length from 3.8 kilometres to 4.1 kilometres. All begin at the existing transmission corridor and traverse a number of gravel pits, some of which are still in use, to the border. There are also some berry farms in the southern



portion of the area. One of the alignments could cross the Aldergrove Lake Regional Park.

Site 2

This site serves route 3. It is generally located in a forested area of mixed deciduous species. The removal of vegetation could affect wildlife due to loss of habitat.

Route 4

There is only one alignment in this section, it is 8.9 kilometres long. It follows the existing railway corridor from the existing Clayburn substation to the border. The land adjacent to the line is mixed industrial, with some agricultural, commercial and residential use.

Site 3

This is the existing Clayburn substation. The land needed to upgrade this site has already been cleared and would not have a significant effect on surrounding areas.

Route 5

This route runs south to the border from the existing transmission corridor through the Sumas Prairie between Whatcom and Lawson roads. There are two alignments along this route, one is 5.5 kilometres long and the other 6.1 kilometres. Both traverse farming areas, the majority of which are privately owned. A gas and an oil pipeline and a railway line are in this region.

Site 4

This location recommended for route 5 is on the side of the Sumas Mountain, north of Highway 1. It is covered by mixed forest, some forage fields and portions of a "wet" meadow. If this site were used part of the forage field could be lost. Removal of shrubs could mean loss of wildlife habitat. In addition this site could be very visible to surrounding residents.

Route 6

This has a single alignment of 6.9 kilometres in length, which runs on either side of McDermott Road to the border. The region through which it runs includes residential and farm land. A gas pipeline and railway cross the alignment in the south. Much of the land is privately owned with the exception of the rights-of-way for the gas pipeline and railway.

Site 5

The site for route 6 is partly in what appears to be an abandoned poultry operation. The land has high agricultural potential and is an area where archaeological sites may occur.

Public values identified

Through the studies undertaken to date we were able to identify possible transmission line routes and substation locations. During the selection process we carefully considered all the information gathered during public consultation. Many of you commented on the number of electrical powerlines in the Fraser Valley. You also discussed a variety of topics including:

Land Use and Property Values

Taking into consideration land use and property impacts such as land values, the public felt that wherever possible the route should avoid residential areas. It was also considered important to attempt to minimize impacts by following property lines, existing rights-of-way or industrial corridors.

Protection of Agricultural Land

The depletion of farm land is of particular concern to the Sumas Prairie farmers. It was felt that farming practices should be considered when routing the transmission line. Therefore routes located in areas of more compatible land use (eg. industrial areas, roads and gravel pits) were seen as more favourable.

Putting it all together

Keeping your suggestions in mind, it appears that routes 3 and 4 should be investigated further.

Route 3 is felt to have the least social impacts as the area is not densely populated, and devoted largely to the extraction of gravel. However careful planning would be required to protect viewscapes and minimize the impact on berry farmers.

The favoured option for route 3 in terms of reinforcing substation facilities appears to be expansion of the existing Clayburn substation, together with a short transmission line connection to one of the 500 kV lines running through the Fraser Valley. However a smaller station will be required at the intersection of the intertie with the corridor.

Route 4 is also considered a candidate for further detailed studies as it follows an existing railway line. Although much of the route is along the railway and through industrial areas, a portion goes through Abbotsford. Further

Comparison of Route Options Possible Impacts: H-High M-Medium L-Low

Route Option/ Planning Criteria	Route 1	Route 2	Route 3	Route 4	Route 5	Route 6
Land Use	M Traverses farm land & rural properties	L U/G route along 264th	M Traverses farmland, gravel pits & berry fields	L Industrial/commercial land uses along railway corridor	H Traverses farmland & berry fields	H Traverses farmland & adjacent rural community
Social Considerations	M Impacts of resid. prop. EMF concerns	L Minimal social concerns	L Low impact on commercial & farm operations	L Uses existing industrial corridor	M Impact on farming operations	M Impact on farming operations
Environmental Considerations	M Possible fisheries & agricultural impacts	L Possible fisheries & visual impacts	L Possible impacts on Aldergrove Lk. Park Possible fisheries impacts	M Possible visual impacts	M Possible visual impacts. Potential archaeological impacts	M Visual impact. Possible fisheries/ archaeological impacts
Technical Considerations/ Cost	L	H Underground cables	L	M Specialized structures required	L	L

Comparison of Site Locations

Station Option/ Planning Criteria	1 (for routes 1&2)	2 (for route 3)	3 (for route 4)	4 (for route 5)	5 (for route 6)
Land Use	M Not currently used for agriculture	M Not currently used for agriculture	L Existing substation site	H Rural/residential land use	H Used as forage field
Social Considerations	M Impacts on residential property	M Impacts on residential property	L Minimum social concerns	H Impacts on residential use	H Impacts on farming operations
Environmental Considerations	M Possible visual and wildlife impacts	M Possible wildlife and agricultural impacts	L Minimal impacts	H High visual impacts Possible agricultural impacts	H High agricultural and visual impacts
Technical Considerations/ Cost	M	M	L Existing substation	M	M

discussions and careful planning will be required, especially given the types of structure proposed.

For Route 4 an expansion of the existing Clayburn substation, together with a short transmission line connection to one of the 500 kV lines running through the Fraser Valley appear to be a favoured option. This could provide facilities for both the substation reinforcement and the intertie.

The routes which appear less favourable

* Route 1 - The impacts of the first route could be high for small farms and there could be visual impacts. In addition fisheries and wildlife could be affected because of crossings on Bertrand, Pepin and Fishtrap Creeks and Homestead Brook. The substation site could be quite visible.
* Route 2 - This is the underground option having a short length in easy terrain. Although shown as a route option along 264th Street it was developed and studied to verify earlier advice that the cost associated with an underground circuit was much more than a conventional overhead transmission line. Studies did, in fact, confirm that conclusion and could be generally applied to compare relative costs of an underground versus an overhead circuit on other route options.
* Route 5 - This line crosses high quality agricultural land in the Sumas Prairie. The substation locations (site 4) associated with this route would be in a developed area and highly visible.
* Route 6 - Route 6 crosses high quality agricultural land in the Sumas Prairie and impacts rural residential areas in the vicinity of Vye Road and the US border. The substation (site 5) could be located on productive agricultural land and would be very visible.

During our next round of public consultation we will be seeking your comments and views on all route options, but most specifically on routes 3 and 4, which appear to be the options emerging from studies so far.

Working with PSPL

PSPL submitted a Presidential Permit Application in May 1989 to the U.S. Federal Department of Energy, indicating a border crossing in the general area to the west of the Abbotsford airport.

Hydro's route 3 would intersect the U.S. border in the general vicinity of Lefeuvre and Bradner roads. Route 4 would intersect it in the Huntington area.

To ensure a consistent and coordinated approach on both sides of the border, PSPL will be returning to the study area to evaluate routes running north from the Bellingham area to the border, where they would intersect with either routes 3 or 4. Their Presidential Permit Application will be amended to reflect the broadened study area.

Public consultation

Public consultation has occurred in conjunction with technical and environmental studies. It involved meetings with a variety of interest groups, local governments and the general public.

The object of the process was to identify values and gain information for inclusion in the analysis of route options.

We began meeting with local and regional governments in September last year. This was followed up with a media advisory a month later and a newsletter, which was mailed to all households in the study area. In October we held our first series of public meetings in Aldergrove and Matsqui. The second series of meetings in November were held in Aldergrove and Abbotsford.

We also met with Sumas Prairie farmers in November to discuss the importance of agricultural land in the Fraser Valley and the potential effects of a transmission line.

We are currently in the process of preparing a report summarizing the technical, socio-economic and environmental studies to date. This will include a summary of the results of public input. Like this newsletter it is hoped that the report will stimulate discussion. We are looking for opinions that will assist in selecting a route and substation locations which are least disruptive to the environment and the community.

We expect to return to the Fraser Valley to review route options and substation locations later in the year.

Fraser Valley — PSPL
Your input

We would like to hear your views on the route options and substation sites outlined in this newsletter. Please call us collect at 1-800-663-1377 or complete this clip-out and send to:

B.C.Hydro, External Relations — 1610-808 Nelson Street, Vancouver, B.C. V6Z 2H2

Name: _____

Address: _____

Telephone Number: _____

Comments: _____

Questions about the project:

How would you rank the options? _____

Which transmission route would you favor? _____

Why did you select this ranking? _____

Do you want to be added to our project mailing list? ❑ YES ❑ NO

Would you like us to send you more information on any of the following?

❑ Electric and Magnetic Fields
❑ Electricity Trade
❑ Power Smart
❑ New Subsidiaries
❑ Project Planning - Electric System Projects
❑ Vegetation Management in Transmission Line Corridors
❑ Safety near Transmission Structures
❑ Introduction to 1990 Electric Load Plan
❑ B.C. Hydro Environmental Principles
❑ Energy Project Review Process
❑ Long-Range Planning
❑ Independent Power Producers
❑ Resource Smart
❑ Other (please specify)

_____

_____

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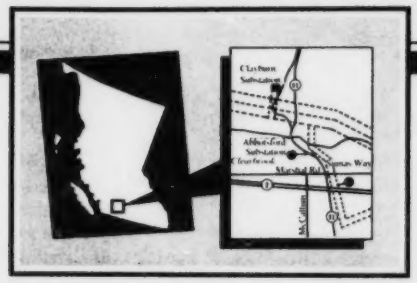
Recycled Paper

BC hydro



News Brief

No. 1

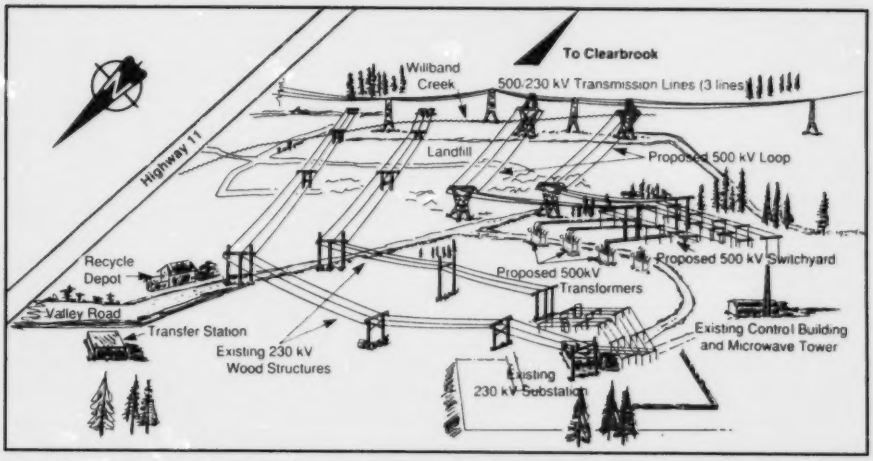
South Fraser Valley System Reinforcement

Planning continues for South Fraser Valley Electrical System Reinforcement

In 1989, B.C. Hydro initiated studies in the South Fraser Valley for a reinforcement of the electrical system to meet the growing demand for electricity in that area. During 1989 and 1990, meetings and discussions with the public as well as local and regional governments were held to help plan this reinforcement.

A proposed transmission line interconnection with Puget Sound Power and Light in Washington State was also part of those studies. Although the interconnection project is no longer being considered, planning for reinforcement of the electrical system to help meet electricity needs in the South Fraser Valley continues.

For more information write to:
B.C. Hydro,
External Relations
1610-808 Nelson Street
Vancouver, B.C. V6Z 2H2
or call
1-800-663-1377



Artists impression of reinforcements at Clayburn substation

Future Electricity Choices for Lower Mainland

Growth and development in the Lower Mainland will present new challenges to British Columbians to meet the growing demand for electricity.

To help ensure reliable supplies of energy are available, B.C. Hydro is looking to efficiency programs such as Power Smart and Resource Smart, new and expanded transmission facilities, coordination with neighboring utilities, co-generation initiatives, and independent power producers.

Determining how to best meet our demand for electricity is a shared responsibility. B.C. Hydro has initiated a new program designed to establish a process for involving Lower Mainland communities in planning their electricity needs and the most appropriate means for meeting those needs. The "Electricity in the Lower Mainland: Choices for the Future" program will be underway shortly, and will involve consultation with the public, interest groups, B.C. Hydro customers, and municipal and regional governments.

Hydro is now setting the stage for "Electricity Choices" with its continued public consultation on south Fraser Valley electrical needs and options.

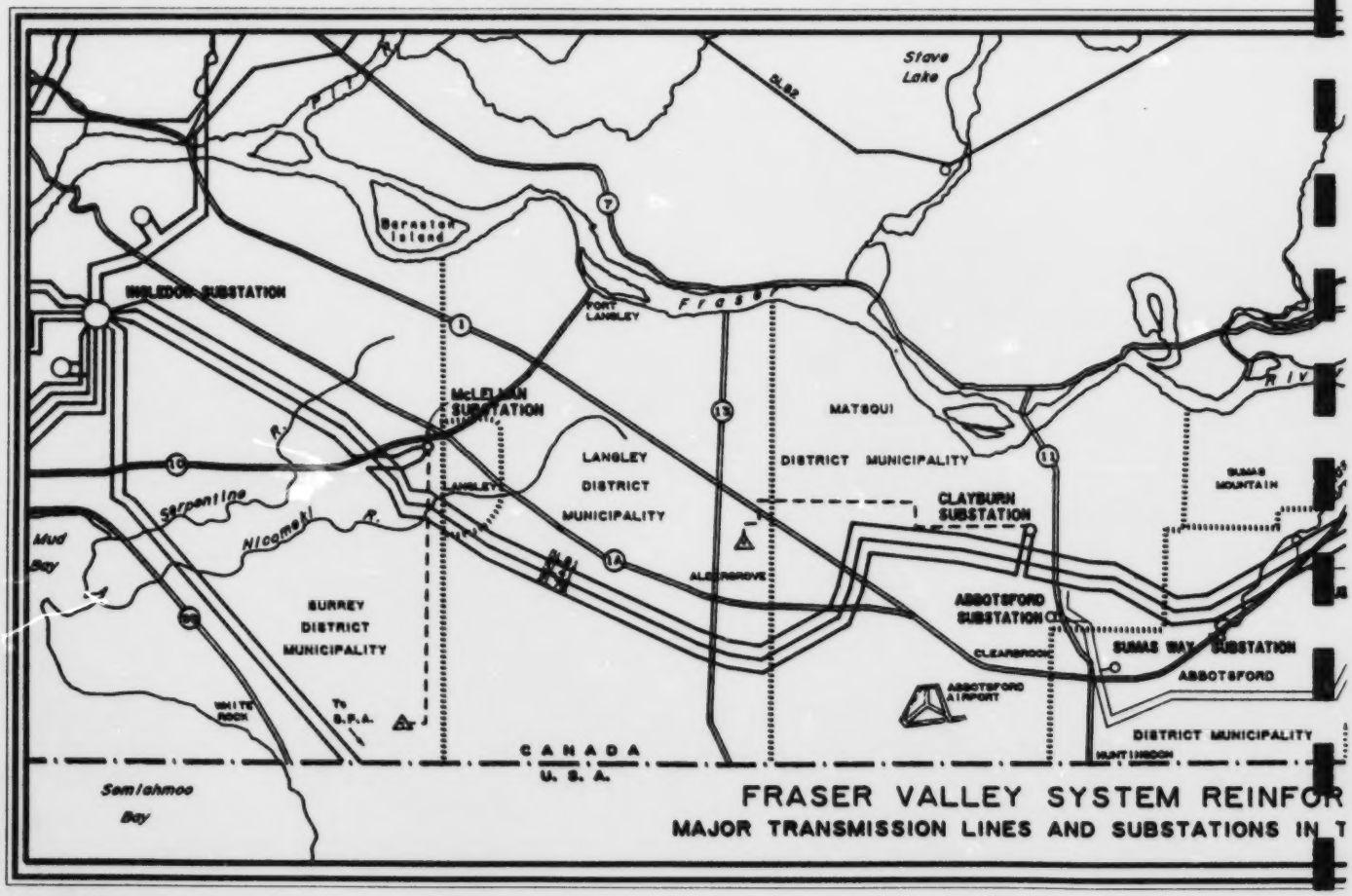
Electricity supply for the Fraser Valley

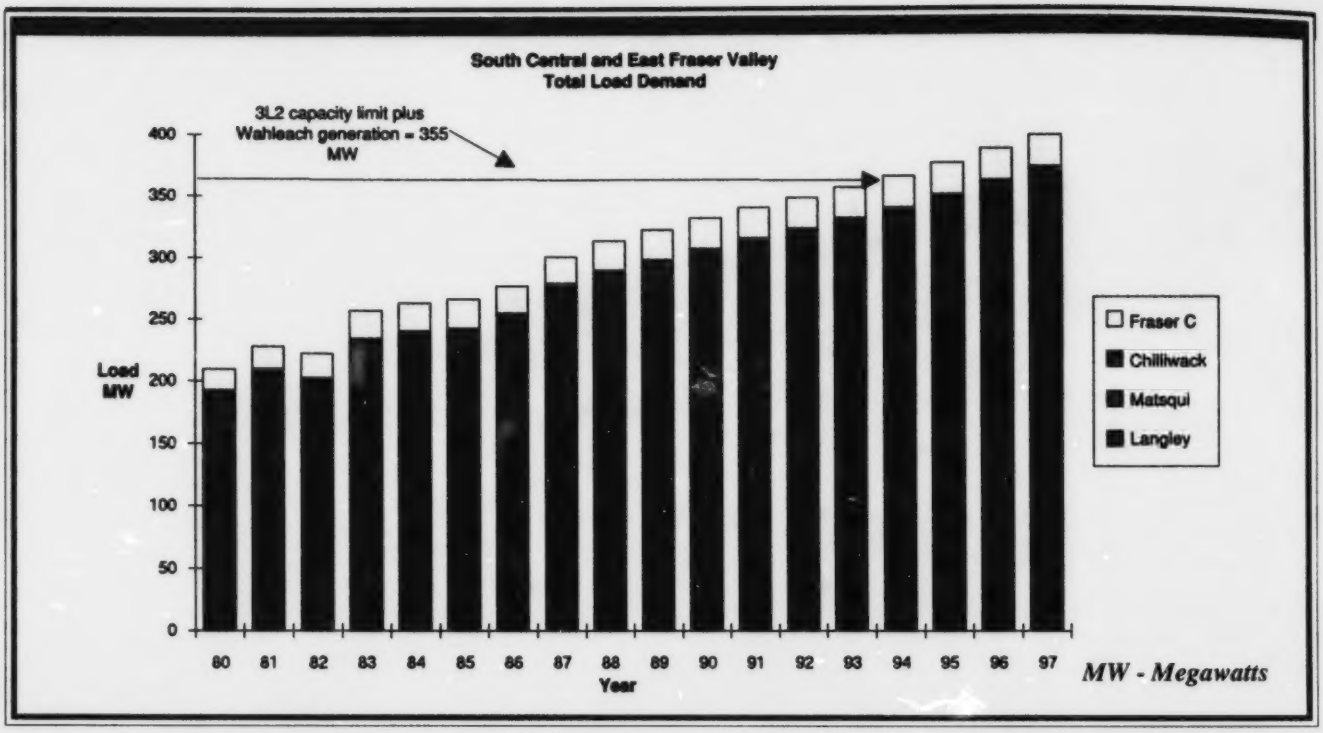
Ging power to people in the Lower Mainland is a major factor in the way B.C. Hydro plans its generation, *transmission* and *distribution* system. The transmission system connects the generation resources that produce electricity to the major substations near communities which use the electricity. From these major substations, electricity is fed into lower voltage substations and then into distribution lines which supply energy for business and households (see diagram on page 4).

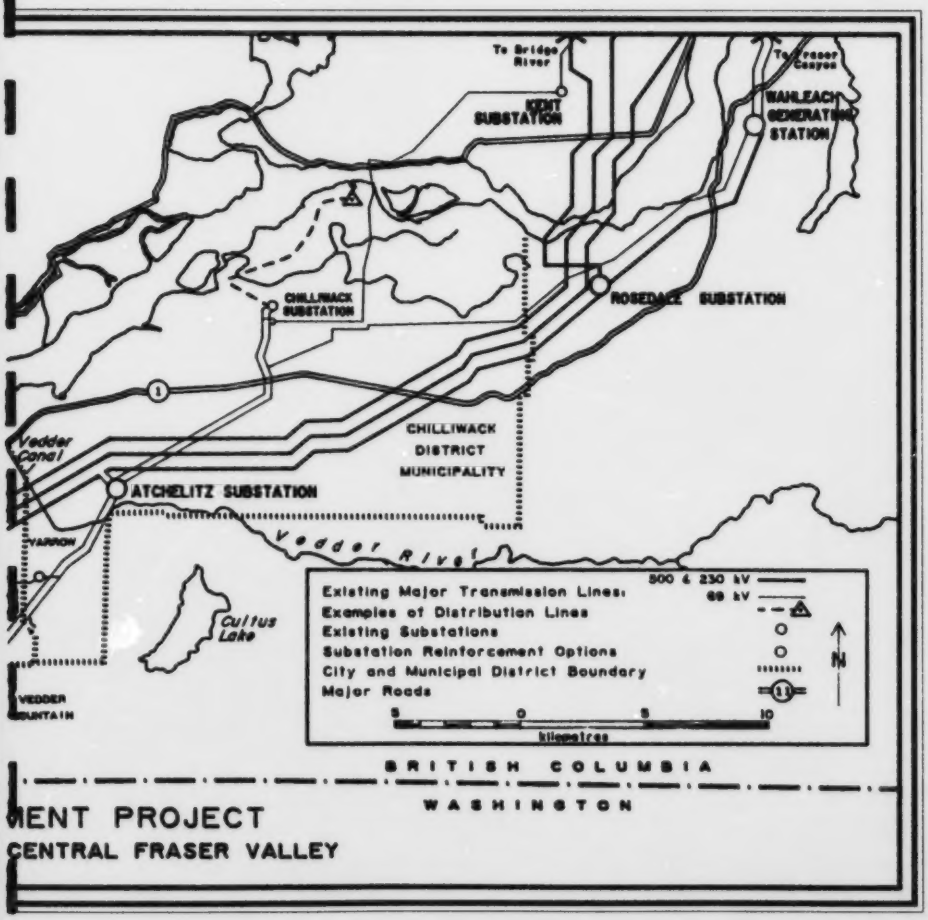
Almost all the power we use in the Fraser Valley is generated elsewhere and brought to our homes and businesses by long distance transmission lines. The Lower Mainland and Vancouver Island area (of which the Fraser Valley is a part) constitutes 70 percent of the existing electrical load. Hydro expects the overall provincial load growth to increase by 3 - 4 percent annually and we anticipate the Lower Mainland and Vancouver Island area will continue to account for 70 percent of the expanded provincial load growth.

B.C. Hydro is working with communities and municipalities to determine ways to improve distribution security. A reliable transmission system is necessary to create a dependable source of electricity to the major substations for subsequent distribution to customers. Two transmission sources provide electrical energy to the South Fraser Valley. The first source is Bridge River generating plant west of Lillooet which feeds Rosedale substation along a 360 kilovolt (kV) transmission circuit. At Rosedale, electricity is transformed for transmission east to the Fraser Canyon (69 kV) and west to the Fraser Valley (230 kV).

The second source is from large generating plants in the interior which feed Ingledow, the principal transmission substation for the Lower Mainland. Ingledow also transmits electricity to the South Fraser Valley via 230 kV transmission lines through the intermediate substations of McLellan, Clayburn, and Atchelitz. Wahleach substation near Hope provides a supplementary source of electricity generation. If transmission from either





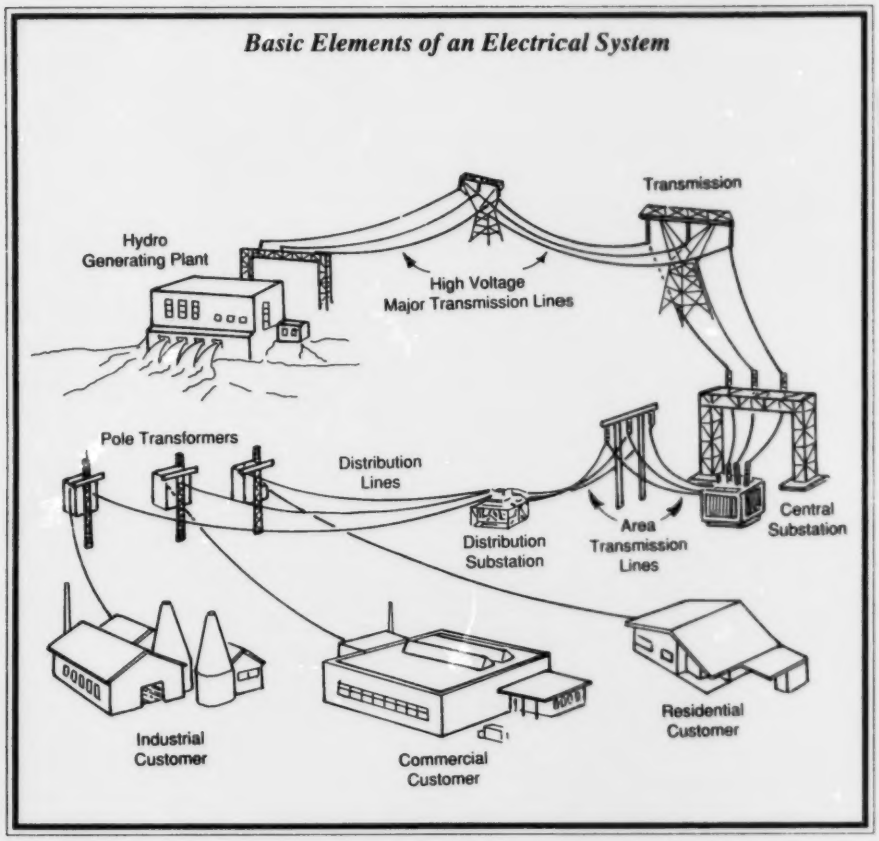


Bridge River or Ingledow were to be interrupted, the other circuit would have to supply the total electricity demand for the South Fraser Valley and Fraser Canyon. Customers in these areas could be left without electricity during a system emergency. Population growth and commercial and industrial development will impose further demands on the electrical system serving the Fraser Valley.

Projected Growth

The Table above shows the past and projected load growth in the Langley, Matsqui, Chilliwack, and Fraser Canyon areas. The Table shows that the greatest load growth is centered in and around Matsqui.

These projections are based on growth and development estimates provided by regional planners. They include anticipated electrical savings due to B.C. Hydro's energy efficiency programs and assume that municipalities will not undertake "no-growth" policies.



System Reinforcement Options

There are three feasible options for reinforcing the transmission system to meet future electricity needs in the South Fraser Valley. The options involve modifying one of the existing 230 kV substations in the Fraser Valley at McLellan, Clayburn, or Atchelitz.

Reinforcing a substation would involve upgrading to include 500 kV transmission capacity with a loop into the substation from one of the 500 kV transmission lines running east-west through the Fraser Valley. The results of recent planning, technical and environmental studies are shown in the comparative evaluation matrix on page five.

Review of the Options

McLellan Option

Modification of the McLellan substation would meet the needs of the South Fraser Valley for about twenty years. However, additional right-of-way would be required for the transmission line connection. Design and construction costs for McLellan are much higher than costs for Clayburn or Atchelitz.

Clayburn Option

The transmission line rights of way, and the station property for both the 230kV and 500 kV components of the Clayburn substation were acquired in 1979. The 230 kV portion was built and became operational in 1984. 500 kV station reinforcement at this location would provide the most effective source of electricity in the region because of its central location, and would meet anticipated demands for electricity for more than twenty years.

Atchelitz Option

Substation changes would require additional land from the agricultural land reserve, resulting in a loss of productive farmland in the area. Although expansion could meet anticipated electricity demand (load) for about ten to fifteen years, it would not be as close to the load centre (highest population) in the Fraser Valley and would therfore be less reliable in the event of an emergency.

Non-Reinforcement Options

Power Smart is a collective name for 25 programs B.C. Hydro introduced two years ago with the objective of delaying the introduction of major new generating facilities as long as possible.

To date the combined efforts of Power Smart programs has saved the province 280 million kWh of energy annually - enough power to meet the energy needs for 28,000 new homes. The Fraser Valley plays a key role in this effort; for example in February the Otter Co-op in Aldergrove introduced Power Smart lighting in its store which will save enough energy to meet the needs of 25 B.C. homes a year .

By the mid 1990s we expect electrical savings from Power Smart to be as much as 4% of the total electrical load of the province. However ➡

Ratings of Options

CRITERIA: / OPTIONS:	*Environmental Constraints*	*Technical/ Engineering Constraints*	*Cost Constraints*	*Land Use/Social Impacts*	*Visual Impacts*	*Risk of not meeting 1994 In-service date*	*Risk of not meeting long term elec. needs*
McLellan Reinforcement to 500 kV	**MODERATE** adjacent to Nicomekl River flood plain	**MODERATE** compact substation required	**HIGH** $20 - 22 million	**LOW** surrounding land use is industrial, commercial	**LOW** substation is well screened	**MODERATE** some difficulty in meeting schedule	**MODERATE** will meet needs for approx. 20 years
Clayburn Reinforcement to 500 kV	**LOW** fisheries concerns in Willband Creek	**MODERATE** poor soil conditions	**MODERATE** $13 - 16 million	**MODERATE** expanding residential use in vicinity	**MODERATE** visible from some residential areas	**LOW** schedule can be met	**LOW** will meet needs for greater than 20 years
Atchelitz Reinforcement to 500 kV	**MODERATE** loss of productive farm land	**LOW** existing substation is very close to trans. lines	**MODERATE** $12 - 15 million	**HIGH** impact on existing farming operations	**LOW** addition will have incremental impact	**MODERATE** some difficulty in meeting schedule	**HIGH** will meet needs for approx. 10 - 15 years

projected load growth, averaging 2.7% per year, may exceed 14% in the same time frame. For the South Fraser Valley, the effect of Power Smart will be to defer the need to upgrade the reliability of the transmission system in the area by over a year, to about 1995, but this will not eliminate the need for reinforcement entirely.

Summary

Reinrforcement of the 230 kV substation at Clayburn appears to be the most effective in meeting anticipated demand for electricity in the South Fraser Valley based on municipal and regional planning projections for the area.

At some time, depending on the rate of growth in the Fraser Valley, expansion of all of these substations may eventually be required. The analysis suggests that expansion should occur at the substation with the greatest potential for providing the largest number of customers with secure and reliable electricity - with the least overall impact, namely Clayburn substation.

Planning and Environmental Studies

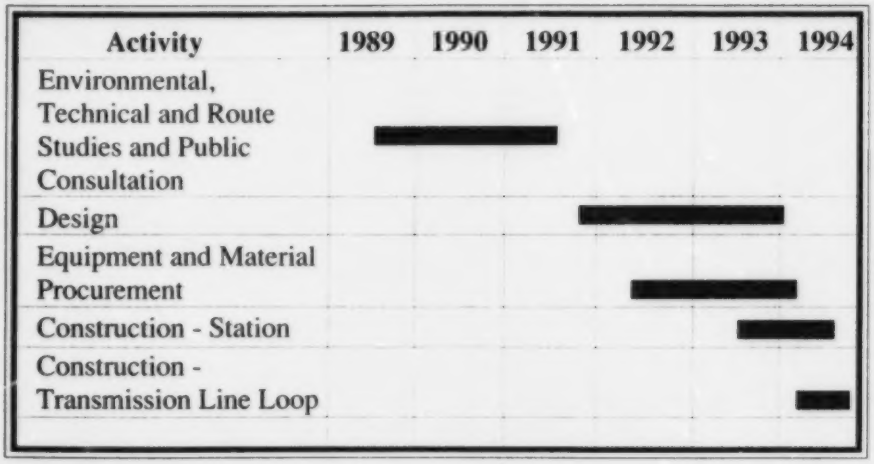
During the planning stage for all B.C. Hydro projects, environmental and social impacts of all project alternatives are carefully studied and analyzed. As part of our planning for the South Fraser Valley reinforcement project, independent consultants were retained to undertake studies on a variety of issues including; wildlife, fisheries, water and land use, forestry agriculture, heritage and archaeological resources, and visual and recreation values. These studies are designed to identify the nature of the resources that could be affected by the proposed project alternatives. The information is then used to identify how the impact on these resources can be minimized by effective planning, design and construction.

B.C. Hydro is committed to minimizing the impact of energy projects on the natural and social environments.

Approval to be Sought

All major energy projects in B.C. must satisfy the British Columbia Utilities Commission Act. This Act regulates utilities and provides for review and certification of projects that generate, use, store transport or transmit large quantities of energy. Construction of a 500 kV substation is a regulated project.

Following completion of the planning studies and public consultation, B.C. Hydro will submit an application for an Energy Project Certificate (EPC) to the Minister of Energy Mines and Petroleum Resources. The application will include the results of the technical, environmental and public consultation studies.



Project Schedule

Environmental, technical and planning studies were initiated for the substation reinforcement in 1989 and 1990.

B.C. Hydro expects application for regulatory approval to be made in the summer of 1991. If approvals are received, design and construction would take place between 1992 and 1994, with a project in-service date of 1994. The project schedule is outlined on this chart.

Public Involvement

While much of the focus of the 1989 and 1990 public meetings and discussion sessions in the South Fraser Valley was on the proposed Puget Sound Power and Light intertie, comments were also received on the substation reinforcement.

Generally, the public recognized the need for substation reinforcement in the South Fraser Valley to meet the area's growing demand for electricity. Initial indications were that Clayburn was recognized as the most suitable site for reinforcement. B.C. Hydro is now involving the public in reviewing the site location analysis.

The "Electricity Choices" program will involve all communities in the Lower Mainland in planning for their future electricity needs. This ongoing process will involve a close working relationship amongst the public, governments, special interest groups, and B.C. Hydro to determine the best means of meeting electricity needs.

If you would like to be involved in the Substation Reinforcement Project, please would you complete the form below or call us at our toll-free telephone information line (1-800-663-1377).

Your Input

We would like to hear your views on the Substation Sites outlined in this newsletter and/or "Electricity Choices". Please call us collect at 1-800-663-1377 or complete this clip-out and send to:

B.C. HYDRO,
EXTERNAL RELATIONS
1610-808 Nelson Street
Vancouver B.C. V6Z 1Y3

I would like to be on the mail list for the Fraser Valley System Reinforcement Project

*Name:*_____ *Phone:*_____
*Address:*_____ *Postal Code:*_____
*Comments:*_____

INFO SHEET

Electric and Magnetic Fields

Electric and magnetic fields (EMFs) exist wherever there is electricity.

Public concern has been expressed over the possibility that exposure to the electromagnetic fields associated with transmission and distribution lines could have the potential to adversely affect human health.

B.C. Hydro recognizes the public interest in this issue of human health risks from electromagnetic fields and continues to closely follow all relevant scientific developments. In addition, we are evaluating public and employee exposure to EMFs. We participate, on an on-going basis, in utility and technical forums on the subject.

A full-time project manager has been appointed to deal specifically with this important issue. B.C. Hydro has also retained consultants with specific expertise to assist in evaluating research and to provide advice on EMFs, in addition to internal technical experts.

What are electromagnetic fields? Although electric and magnetic fields have different properties they are often combined and referred to as EMFs. Electromagnetic fields that alternate or change polarity, result from an alternating current or "AC" source of electricity.

In North America this change in polarity occurs 60 times per second (usually referred to as 60 Hertz). These fields are associated with all electrical appliances in our homes and work places. They also come from the wiring that delivers electricity to houses and buildings as well as transmission lines and equipment for voltage transformation.

Our exposure to artificially induced 60 cycle fields has increased from zero about 100 years ago to the levels of today without any clearly established effects on public health.

This finding is the result of hundreds of laboratory and field studies on the effects of electromagnetic fields on humans, livestock, laboratory animals, isolated cells and tissues. Scientists have studied the effects of EMF at strengths comparable to the highest levels directly under a transmission line. Other laboratory experiments used field intensities much higher than would ever be experienced by humans or animals in every day life.

Scientists make a distinction between biological responses or effects, and **adverse or deleterious effects**. The response of the eye to turning on the light in a room serves as a clear example of a biological effect that is in no way adverse.

Two basic approaches have been used by scientists to explore these biological responses or effects.

1. Laboratory studies using human or animal experimental subjects, or isolated organs and cells.

2. Epidemiologic studies in human populations that look for an association between exposure to electric and/or magnetic fields and various diseases.

Laboratory studies of humans exposed to intense electric and magnetic fields produce no observed changes in blood pressure, body temperature, sleep, appetite and physical functions. Other studies show mood and behaviour unchanged in human subjects.

However, these studies have documented that very strong electric fields can sometimes be felt by the stimulation of body hair. We sense static electricity, in much the same way, when combing our hair in dry winter weather. Other documented effects include slight changes in brain wave activity and heart rate. These minor changes are generally viewed as not harmful, and in these experiments, the subjects' awareness, judgment and mood were unaffected.

One recent epidemiologic study of childhood cancer showed a weak correlation between cancer cases and proximity to certain types of distribution lines. However, no association was found between childhood cancer and measured magnetic field levels in this or any other study. In fact, the investigator who conducted the study observed that **"... it should be kept in mind that we have not proven that magnetic fields cause cancer"**.

Epidemiologists and medical specialists have studied workers exposed to electromagnetic fields, such as linemen and aluminum smelter workers. After examining their physical and psychological well-being they found no indication of adverse effects from these exposures. Studies of the general population exposed to electromagnetic field from powerlines also did not show any increase in the risk of developing cancer.

A similar consensus, regarding the general public, has been reached by the World Health Organization (1984. 1987), the New York State Power Lines Project (1987), and Health and Welfare Canada (1990). After evaluating all of the available data, these organizations found that no risk to human health resulting from exposure to electric or magnetic fields from power distribution and transmission lines has been established.

Other researchers have probed the health and reproduction of farm animals living near, or directly under, high voltage transmission lines. Extensive studies in Sweden and the U.S. indicated that exposure to the fields associated with transmission lines is not harmful to farm animals.

B.C. Hydro is committed to the search for a better understanding of EMF effects and will continue to provide the latest information to the public and its own work force.

For further information call:

(604) 663-3958 (collect if out of town)
Kelly Gibney, Ph.D
Project Manager
EMF Issues

INFO SHEET

Need for Substations - 1990s

Substations are an integral part of the B.C. Hydro electrical system. The facilities generally described as "substations" provide several functions necessary to operate a large electrical system. The three most common functions of these substations are:

- Transformation Substation - for the transformation of higher level transmission voltages, to lower level distribution voltages.

- Switching Substation - for the switching of transmission lines.

- Series Capacitor Substation - for the improvement of transmission capability.

There are approximately 250 B.C. Hydro-owned substations at this time with voltage levels ranging from 500 kilovolts (kV) down to 4 kV.

The need for additional substations and expansion at existing substations is directly related to regional and local electric load growth. The present electric load forecast indicates substantial electric load growth can be expected in the next 30 years. In order to meet this increasing demand, alternatives for additional generation are being studied, new transmission lines to carry the power from the generation sites to the load centres are under consideration, and a few new substations will be needed. The majority of existing B.C. Hydro substations have been planned with provisions for future growth so that most system growth will be accommodated within existing substation facilities. However, when new generation is established in an area not close to existing transmission facilities or when customer load develops in areas not served by existing transmission or distribution facilities, a new substation must be established.

The present plans to meet the electric load forecast during the 1990's indicate that seven new substations will be required as follows:

- a new 500 kV series capacitor station is currently being built at American Creek near Hope to increase the load carrying capability of the existing 500 kV transmission lines into the Lower Mainland.

- a new 230 kV switching substation is currently being built near Chetwynd to supply the new Louisiana Pacific pulp mill.

- a new 138/25 kV transformation substation is currently being built in Lantzville near Nanaimo to supply increasing residential and commercial load.

- a new 230/138/25 kV transformation substation is planned for Port Alberni in 1993 to supply increasing distribution and industrial load.

- a new 230 kV switching station is planned for the Fraser Valley in 1993 to interconnect the B.C. Hydro and Puget Sound Power and Light systems.

- a new 138/25 kV transformation substation is planned for 1995 on the west side of Okanagan Lake to supply residential load growth in the developing area north of Westbank.

- a new 138/69 kV transformation station is planned for 1995 near Spences Bridge to reinforce the transmission supply to distribution stations in the Fraser Canyon.

It should be noted that at the same time that new substations are being added to the system, some older stations are being retired, examples of these are: Duncan, Pine St., Georgia G.S., Cranbrook 4 kV, Kimberley 4 kV and Tisdall Capacitor Station. This most often results in the removal of substation equipment and the clearing and restoration of the site for sale or other use. The overall result is that the total number of substations remains relatively constant at about 250.

For additional information, please call our toll-free information line at 1-800-663-1377 or write:

External Relations
19th Floor, B.C. Hydro
970 Burrard Street
Vancouver, B.C.
V6Z 1Y3

BC hydro

Proposal for the FRASER VALLEY SUBSTATION AND PUGET SOUND POWER AND LIGHT INTERTIE STUDY

October 1989

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External Relations Department

Proposal
Fraser Valley Substation and
Puget Sound Power and Light Intertie Study

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INTRODUCTION

B.C. Hydro presently operates a high voltage transmission line corridor running generally in an east/west direction through the Fraser Valley. The corridor has two 500 kV (kilovolt) transmission lines and one 230 kV line. While the two 500 kV lines carry electricity from the B.C. interior to the Ingledow substation in the Lower Mainland, electricity on the 230 kV line supplies the Fraser Valley through a number of 230 kV substations along the line. The Clayburn 230 kV substation, located in Matsqui, is the one that distributes electricity to customers in the Abbotsford, Matsqui and Aldergrove areas.

B.C. Hydro is presently examining two related concerns which could affect the existing Fraser Valley transmission corridor.

The first issue is the need for a new 500-230 kV transformer substation to meet the growing demand for electricity in the central Fraser Valley. The new substation would tap into one of the 500 kV lines located in the existing transmission line corridor to meet the growing need for electricity in the Abbotsford, Matsqui and Aldergrove areas.

Secondly, Puget Sound Power and Light Company (PSPL), an American utility based in Bellevue Washington, has asked Hydro to join it in technical studies and licensing activities for a new transmission line intertie connecting the two systems across the Canada/U.S. border. If we proceed, Hydro would build a new line from its Fraser Valley corridor south to the border. Contracts for electricity to serve PSPL's needs would be negotiated by Powerex, a wholly owned Hydro subsidiary responsible for dealing with all export sales.

Because of the interdependency of these two concerns, Hydro is studying them as a single project.

STUDY RATIONALE

Each of the two portions of the project has its own rationale.

Fraser Valley Substation

Demand for electricity in the Fraser Valley is growing. As demand grows, additional support for the transmission/distribution system is required. The capacity of the existing 230 kV line is not sufficient to meet the expected load growth. Access to electricity on one of the two 500 kV lines is needed. Current load forecasts suggest a new 500-230 kV substation is needed along the line to support the Fraser Valley distribution system in the early to mid 1990's. The need for a new substation exists whether or not an intertie is constructed.

PSPL Intertie

An additional transmission line would also allow Powerex to sell electricity directly from the B.C. Hydro transmission system to PSPL. Initially, during high water periods, when excess generating capacity exists at Hydro dams, surplus non-firm (i.e. interruptible) power could be sold to PSPL on a day to day basis. In the future it would be possible to also sell firm power (i.e. non interruptable) from new resources developed for export by independent power producers in B.C.

REGULATORY APPROVAL

Regulatory approval by the National Energy Board is required for the construction and the operation of the intertie transmission line and for the export of electricity. Hydro must also apply to the Provincial Minister of Energy, Mines and Petroleum Resources and to the B. C. Utilities Commission for regulatory approval.

Puget Sound Power and Light has submitted an initial application to the appropriate American authorities for regulatory approval.

If Canadian and American regulatory authorities approve the project, construction of the transmission line and associated station facilities could proceed.

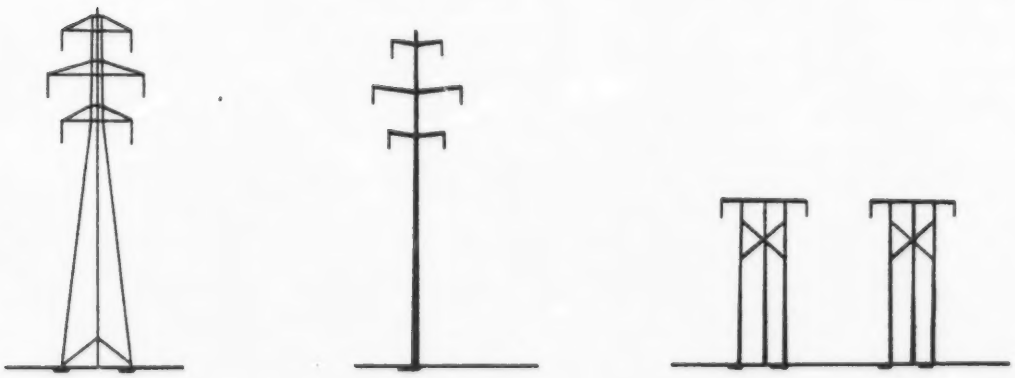
If the 500-230 kV substation is used as the connection point for the new intertie line, it will require approval as part of the project. If, however, the substation is not used as the connection point for the intertie line, separate application for its construction will be made only to the provincial regulatory authorities.

STUDY DESCRIPTION

The study includes a new 500/230 kV substation in the central Fraser Valley. Clayburn substation has been proposed as a possible location for this new facility.

The study also includes construction of two 230 kV circuits travelling in a north/south direction from the Fraser Valley transmission corridor at the north end to the U.S. border at the south end. The line would be located somewhere between 240th Street west of Aldergrove and the Sumas Prairie area of Abbotsford. Depending on its location within this study area the new line could be as short as three kilometers or as long as eight kilometers. The configuration of the line has not yet been determined, nor have the types of structures from which the line will be suspended. However, considering current technology, the two most likely options would be a double circuit configuration (where the two circuits are suspended from a single set of steel support structures) or two single circuits side by side (where each circuit is suspended from its own set of structures; typically of wood pole construction).

FIGURE #1
Basic Transmission Structure Types



Double Circuit
Steel Lattice Towers

Double Circuit
Steel Aesthetic Structures

Two Single
Circuits

The proposed transmission line would be capable of transmitting up to 800 megawatts (MW) of electricity per circuit. Although the amount of surplus electricity that B.C. Hydro would have available for export would depend on water levels at any given point in time, it is anticipated that non-firm surplus exports to PSPL would initially take up only a portion of that capacity.

The excess capacity in the two lines would be used for:

- **line outages** - although either circuit is capable of transmitting the required electricity, the second circuit provides a safety factor in case one circuit is out of service for any reason;
- **economics/efficiency** - operating the lines at less than capacity reduces line loss and, therefore, reduces wastage;
- **system security** - in case of short term emergency situations on either side of the border;
- **long term needs** - planning for electricity needs in the Pacific Northwest must consider options beyond the five to ten year period.

Once the location of the transmission line has been chosen, the issue of connecting the line to the corridor and the planning for the new 500-230 kV substation can be addressed. Where the proposed new line connects with the Fraser Valley transmission corridor, a junction box of some kind (called a station) would be required. At that point the two options would be to connect to the existing 230 kV line or connect to one of the existing 500 kV lines.

Connecting to the 230 kV Line

If the new line connects with the 230 kV line in the corridor west of Clayburn substation, (see Figure #2, Option 1) a simple switching station would be required. Also, if the connection to the 230 kV line is made east of Clayburn, a 230 kV substation would be required (Figure #2, Option 2). However, in this case, another 230 kV line would be required in the existing Fraser Valley transmission corridor connecting this new 230 kV substation to Clayburn. If the new line connects directly at Clayburn, use would be made of the existing station facilities (Figure #2, Option 3).

In all three of the above cases, the existing 230 kV line could not be connected to the proposed line unless a new 500-230 kV substation were built somewhere along the existing corridor to reinforce the Fraser Valley system. This substation will be required in the future to serve increasing demand in any case, but connecting a new intertie to the existing 230 kV line would make the new 500-230 kV transformer substation mandatory.

Connecting to one of the 500 kV Lines

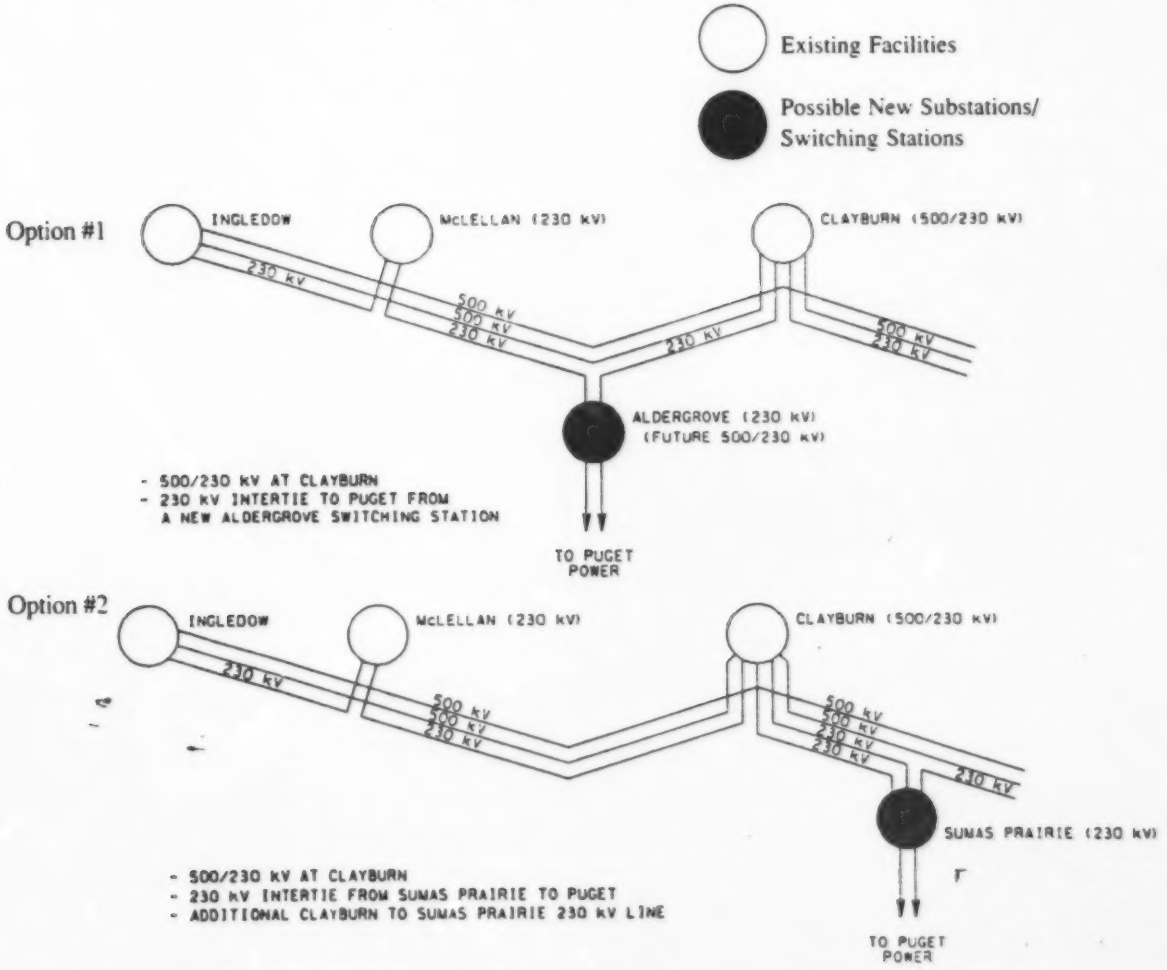
Alternatively, the new intertie line could tie into one of the existing 500 kV lines in the corridor at a new 500-230 kV transformer substation. This substation would also use electricity on the 500 kV line to reinforce the Fraser Valley distribution system (Figure #2, Options 4 and 5).

The 500-230 kV transformer substation would require an area of approximately 300 metres x 400 metres. Clayburn substation is already sized for expansion as a 500-230 kV substation and, therefore, becomes one possible option for its location. A 500-230 kV substation located at Clayburn would require at least one of the existing 500 kV lines to be to be connected to the substation from the corridor 1/2 kilometre south of the station.

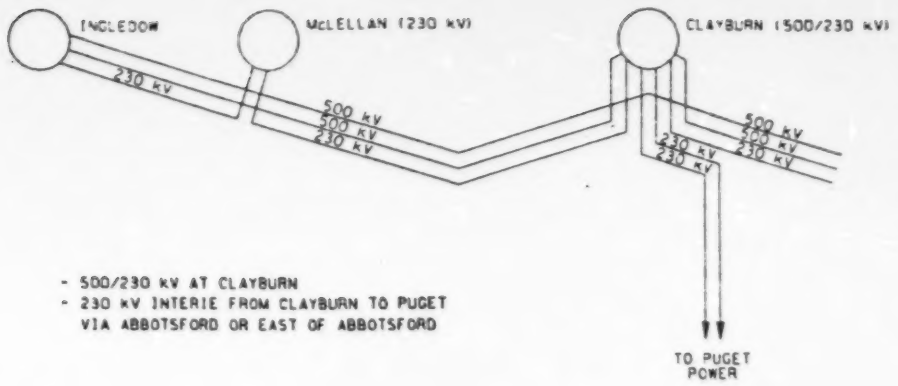
If a new site is required for the substation, between one third and one half of the substation could be located within the existing transmission line corridor with the remainder located adjacent to it.

The projected cost for the line and associated facilities is in the order of 30-40 million dollars depending on route options and other issues.

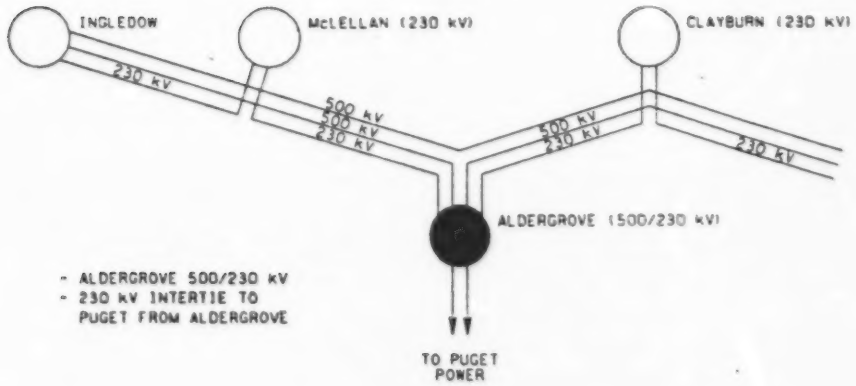
Figure #2
System Alternatives



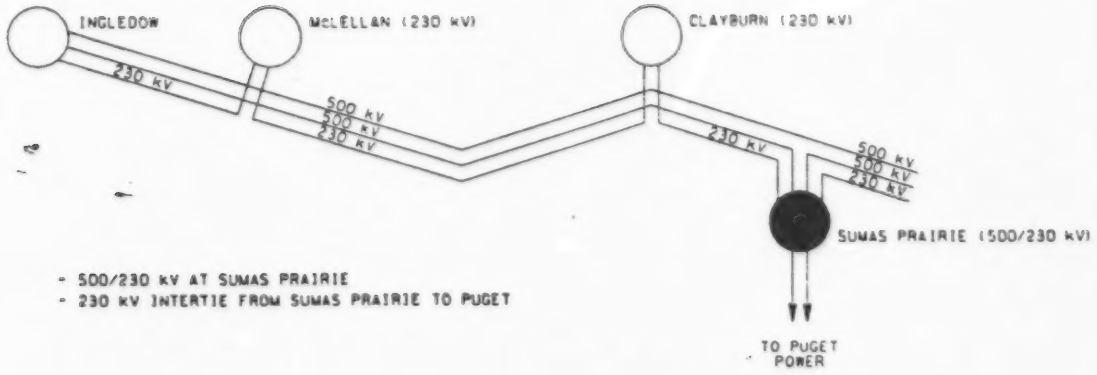
Option #3



Option #4



Option #5



ROUTE PLANNING FOR THE INTERTIE

The route for the transmission line intertie has not yet been selected. Initial planning suggests the line cannot be built within approximately three kilometre of the Abbotsford airport, or within approximately 1.5 kilometre of the airport outer beacon located off 264th Street in Langley. Similarly, land use and aesthetic considerations eliminate a new corridor through the urban concentration of Abbotsford and Matsqui. If these assumptions are correct the possible north/south study areas identified to date are shown on figure #3.

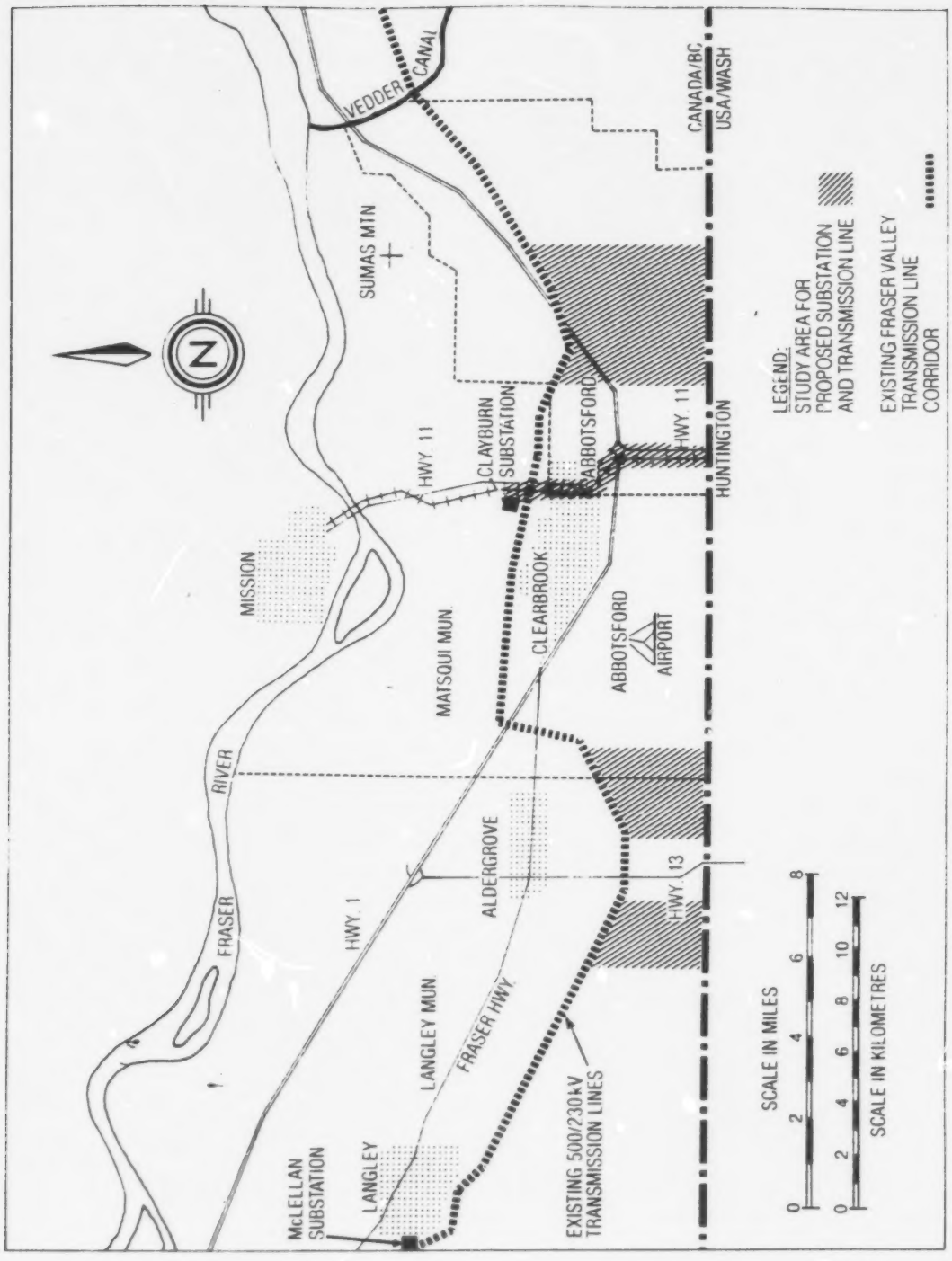
Various technical, environmental and social impact studies currently underway will provide more information about these potential corridors. Public input to the route analysis process will also be sought as part of the Public Consultation Program.

PROPOSED STUDY SCHEDULE

Project Step	Target Completion Date
Planning & Development Study	
- Environmental Studies	December 1989
- Technical Studies	December 1989
- Public Consultation (first phase)	December 1989
Project Application (pending study results) Spring 1990	
Project Approval (projected)	Late 1990
Engineering & Survey	1990-91
Construction 1992-93	
In Service Date	Late 1993

This schedule may change as new information is obtained or decisions are made about the project. B.C. Hydro will inform the public about any changes to the schedule as the project unfolds.

Figure #3
Study Area



PUBLIC CONSULTATION PROGRAM

B.C. Hydro is commi:ted to a comprehensive Public Consultation Program as a means to enhance the planning and design of this project. Public consultation for the Fraser Valley substation and PSPL Intertie is designed to achieve three objectives.

1. Provide as much information as is reasonably possible about the project to interested parties;

2. Incorporate ideas and concerns from interested parties into the planning process and specifically incorporate public input to the analysis of route options for the Intertie;

3. Report back to the general public the input received and how that input has been used in the planning process.

Key steps in the public consultation process include:

	Activity	Target Completion Date
1)	Project Announcement	August 20
2)	Development of a project mail list used to send information to interested parties as it becomes available	Ongoing
3)	Interest Group Meetings	October 1989
4)	Initial Public Meetings	October 1989
5)	Public Workshops on Project Issues	November 1989
6)	Public Meetings to present strategies to address issues raised by the public	December 1989

The Public Consultation Program is designed to incorporate public comments and ideas into the project planning process. Potential concerns that will need to be addressed include route identification, environmental impacts, line configuration and design, substation location and planning. Any other concerns raised by the public will be considered and every effort will be made to address all comments and concerns. The results of the public participation process will be documented and presented as part of B.C. Hydro's application for license to the B.C. Utilities Commission and the National Energy Board of Canada.

An information line has been set up to answer public inquiries concerning this and other Hydro projects. Interested persons can call 1-800-663-1377 or, in the Lower Mainland, call 663-3614.

Fraser Valley System Reinforcement

Public Consultation Program

Submitted to: B.C. Hydro

Submitted by: Context Research Ltd.

Submitted on: July 29, 1991

Appendix B

Correspondence

BC Hydro

Master Letter to Municipal Councils

J.C. Edwards
Manager, External Relations
(604) 663-3795
Fax (604) 663-3323

29 April 1991

Dear

Re: Reinforcement of the Fraser Valley Transmission System

I am writing to inform you about B.C. Hydro's ongoing planning for the electrical transmission system in the south Fraser Valley. In 1989, B.C. Hydro initiated studies on the transmission system in the area in conjunction with a possible transmission line interconnection with Puget Sound Power and Light (PSPL) in Washington State. During 1989 and 1990, discussions with the public and local and regional governments were held to assist in the planning process. Although the PSPL interconnection is no longer being considered by B.C. Hydro, planning for electrical system in the south Fraser Valley continues.

Projected electrical load growth, arising from an expanding population and commercial/industrial development in Langley, Matsqui, Abbotsford and Chilliwack, will necessitate reinforcement of the transmission system if B.C. Hydro is to provide a reliable electricity supply. Electricity for these areas now comes from the Bridge River generating plant near Lillooet and from other large generating plants in the interior which feed into Ingledow substation in Surrey. Electricity from these two major sources feeds into smaller substations in Langley, Matsqui and Chilliwack where it is distributed to customers.

System reinforcements will not only address projected future load but will also help ensure that customers in this area have sufficient electricity if transmission supply from either Bridge River or Ingledow were to be interrupted during a major system emergency. While B.C. Hydro has a number of programs in place, such as POWER SMART, which will slow the growth of electrical load and continue to defer the need to reinforce the transmission system until the mid-nineties, these programs will not entirely eliminate the need for substation reinforcement.

There appears to be three feasible reinforcement options to meet projected load growth in the area in the mid-nineties. Each involves modifying one of three existing 230 kV substations located in the south central Fraser Valley. Although each option has its merits, reinforcement of the Clayburn substation in Matsqui appears to be the most favourable for a number of reasons. High levels of growth and electrical load are expected to continue in Matsqui. As well, the electrical load centre of the transmission system and development here would give the longest period of service without the need for further additional facilities elsewhere. The Clayburn substation site is large enough to accommodate the needed facilities and there is an existing right-of-way connecting it to the 500 kV transmission line nearby. Hence, no additional land would be required. From an environmental standpoint, reinforcement of Clayburn is likely to cause the least overall impact and the right-of-way area, most of which is a reclaimed landfill site, may be made more useful for secondary public purposes.

In the next few weeks, B.C. Hydro will be contacting interested parties and property owners adjacent to the existing Clayburn substation in an effort to obtain their input on its proposed reinforcement. The results of these discussions will be reflected in a future application to the Ministry of Energy, Mines and Petroleum Resources for approval to construct the project.

For further information, or for more direct involvement regarding the proposed project, we would welcome the opportunity to meet with representatives of Council for discussions. Please contact Terry Parsons, our Regional Public Affairs Coordinator, at 663-4458, to make any necessary arrangements.

Yours truly,

J.C. Edwards

c: T.W. Parsons

Mayor George Ferguson and Council
District of Abbotsford
34194 Marshall Road
Abbotsford, B.C.
V2S 5E4

Mayor John Les and Council
District of Chilliwack
8550 Young Road South
Chilliwack, B.C.
V2P 4P1

Mayor John Beales and Council
Township of Langley
4914 - 221st Street
Langley, B.C.
V3A 3Z8

Mayor Dave Kandal and Council
District of Matsqui
#200 - 32315 Fraser Way
Clearbrook, B.C.
V2T 1W7

BC Hydro

Letter to MP's and MLA's

3 May 1991

Dear

Re: South Fraser Valley System Reinforcement

I am writing to inform you about B.C. Hydro's ongoing planning for substation upgrading in the south Fraser Valley. In 1989, B.C. Hydro initiated studies on the transmission system in the area in conjunction with a possible transmission line interconnection with Puget Sound Power and Light (PSPL) in Washington State. During 1989 and 1990, discussions with the public and local and regional governments were held to assist in the planning process. Although the PSPL interconnection is no longer being considered by B.C. Hydro, we still need to consider substation changes to meet local demand (please see attached Newsbrief for additional details).

There appears to be three feasible reinforcement options to meet projected load growth in the area in the mid-nineties. Each involves modifying one of three existing 230 kV substations located in the south central Fraser Valley. Although each option has its merits, reinforcement of the Clayburn substation in Matsqui appears to be the most favourable for a number of reasons. High levels of growth and electrical load are expected to continue in Matsqui. As well, the electrical load centre of the transmission system and development here would give the longest period of service without the need for further additional facilities elsewhere. The Clayburn substation site is large enough to accommodate the needed facilities and there is an existing right-of-way connecting it to the 500 kV transmission line nearby. Hence, no additional land would be required. From an environmental standpoint, reinforcement of Clayburn is likely to cause the least overall impact and the right-of-way area, most of which is a reclaimed landfill site, may be made more useful for secondary public purposes.

In the next few weeks, B.C. Hydro will be contacting interested parties and property owners adjacent to the existing Clayburn substation in an effort to obtain their input on its proposed reinforcement. The results of these discussions will be reflected in a future application to the Ministry of Energy, Mines and Petroleum Resources for approval to construct the project.

British Columbia Hydro and Power Authority, 970 Burrard Street, Vancouver B.C. Canada V6Z 1Y3

We would welcome any comments you may have and will continue to keep you informed about the planning studies and public consultation. If you have any comments or receive questions from your constituents which you wish to share with us, please call me at 663-2653 or our Manager of External Relations, Jack Edwards, at 663-3795.

Yours truly,

for

Thom M. Thompson
Manager
Government and Public Affairs

Attachment

c: J.C. Edwards
T.W. Parsons

Mr. Peter A. Dueck
MLA, Central Fraser Valley
Parliament Buildings
Victoria, B.C.
V8V 1X4

Mr. Harry De Jong
MLA, Central Fraser Valley
Parliament Buildings
Victoria, B.C.
V8V 1X4

The Honourable Carol Gran
MLA, Langley
Parliament Buildings
Victoria, B.C.
V8V 1X4

The Honourable John Jansen
MLA, Chilliwack
Parliament Buildings
Victoria, B.C.
V8V 1X4

Mr. Dan Peterson
MLA, Langley
Parliament Buildings
Victoria, B.C.
V8V 1X4

Mr. Robert L. Wenman
MP, Fraser Valley West
House of Commons
Parliament Buildings
Ottawa, Ontario
K1A 0A6

Mr. Ross Belsher
MP, Fraser Valley East
House of Commons
Parliament Buildings
Ottawa, Ontario
K1A 0A6

BCHydro

Letter to Mail List

J.C. Edwards
Manager, External Relations
(604) 663-3795
Fax (604) 663-3323

10 May 1991

Dear

South Fraser Valley System Reinforcement

I am writing to inform you about B.C. Hydro's ongoing planning for the electrical transmission system in the south Fraser Valley. As residents in the vicinity of our Clayburn substation, you may find the following information and the enclosed "News Brief" of particular interest.

In 1989, B.C. Hydro initiated studies on the transmission system in the area in conjunction with a possible transmission line interconnection with Puget Sound Power and Light (PSPL) in Washington State. During 1989 and 1990, discussions with the public, and local and regional governments were held to assist in the planning process. Although the PSPL interconnection is no longer being considered by B.C. Hydro, planning for the electrical transmission system must continue.

Projected electrical load growth, arising from an expanding population and commercial/industrial development in Langley, Matsqui, Abbotsford and Chilliwack will necessitate reinforcement of the transmission system if B.C. Hydro is to provide a reliable electricity supply. Electricity for these areas now comes from the Bridge River generating plant near Lillooet and from other large generating plants in the interior which feed into Ingledow substation in Surrey. Electricity from these two major sources feeds into smaller substations in Langley, Matsqui and Chilliwack where it is distributed to customers.

System reinforcements will not only address projected future load but will also help ensure that customers in this area have sufficient electricity if transmission supply from either Bridge River or Ingledow were to be interrupted during a major system emergency. While B.C. Hydro has a number of programs in place, such as POWER SMART, which will slow the growth

3-E74.L

of electrical load and continue to defer the need to reinforce the transmission system until the mid-nineties, these programs will not entirely eliminate the need for substation reinforcement.

To address this, there appears to be three feasible reinforcement options to meet projected load growth in the area in the mid-nineties. Each involves modifying one of three existing 230 kV substations located in the south central Fraser Valley. Although each option has its merits, reinforcement of the Clayburn substation in Matsqui appears to be the most favourable for a number of reasons. High levels of growth and electrical load are expected to continue in Matsqui. As well, development at Clayburn would give the longest period of service without the need for further additional facilities elsewhere. The Clayburn substation site is large enough to accommodate the needed facilities and there is an existing right-of-way connecting it to the 500 kV transmission line nearby. Hence, no additional land would be required. From an environmental standpoint, reinforcement of Clayburn is likely to cause the least overall impact. The right-of-way area, most of which is a reclaimed landfill site, may be made more useful for secondary public purposes.

In the next few weeks, B.C. Hydro will be contacting interested parties and property owners adjacent to the existing Clayburn substation in an effort to obtain their input on its proposed reinforcement. The results of these discussions will be reflected in a future application to the Ministry of Energy, Mines and Petroleum Resources for approval to construct the project.

For further information, or for more direct involvement regarding the proposed project, please call our toll free information line at 1-800-663-1377 or complete the form on the enclosed newsletter.

Yours truly,

J.C. Edwards

Enclosure

3-E74.L

BCHydro

Letter to Media

J.C. Edwards
Manager, External Relations
(604) 663-3795
Fax (604) 663-3323

23 May 1991

Dear

Re: South Fraser Valley System Reinforcement

I am writing to inform you about B.C. Hydro's ongoing planning for the electrical transmission system in the south Fraser Valley.

In 1989, B.C. Hydro initiated studies on the transmission system in the area in conjunction with a possible transmission line interconnection with Puget Sound Power and Light (PSPL) in Washington State. During 1989 and 1990, discussions with the public and local and regional governments were held to assist in the planning process. Although the PSPL interconnection is no longer being considered by B.C. Hydro, planning for the electrical transmission system must continue.

Projected electrical load growth, arising from an expanding population and commercial/industrial development in Langley, Matsqui, Abbotsford and Chilliwack will necessitate reinforcement of the transmission system if B.C. Hydro is to provide a reliable electricity supply. Electricity for these areas now comes from the Bridge River generating plant near Lillooet and from other large generating plants in the interior which feed into Ingledow substation in Surrey. Electricity from these two major sources feeds into smaller substations in Langley, Matsqui and Chilliwack where it is distributed to customers.

System reinforcement will not only address projected future electricity demand but will also help ensure that customers have sufficient electricity if transmission supply from either Bridge River or Ingledow were to be interrupted during a system emergency. While B.C. Hydro has a number of programs in place, such as POWER SMART, which will slow the growth of electrical load and will continue to defer the need to reinforce the transmission system until the mid-nineties, these programs will not entirely eliminate the need for substation reinforcement.

To address this, there appears to be three feasible reinforcement options to meet projected load growth in the south Fraser Valley area. Each involves modifying one of three existing 230 kV substations located in the south central Fraser Valley. Although each option has its merits, reinforcement of the Clayburn substation in Matsqui appears to be the most favourable for a number of reasons. High levels of growth and electrical load are expected to continue in Matsqui. As well, development at Clayburn would give the longest period of service without the need for further additional facilities elsewhere. The Clayburn substation site is large enough to accommodate the needed facilities and there is an existing right-of-way connecting it to the 500 kV transmission line nearby. Hence, no additional land would be required. From an environmental standpoint reinforcement of Clayburn is likely to cause the least overall impact. The right-of-way area, most of which is a reclaimed landfill site, may therefore be made more useful for secondary public purposes.

In the next few weeks, B.C. Hydro will be contacting interested parties and property owners adjacent to the existing Clayburn substation in an effort to obtain their input on its proposed reinforcement. The results of these discussions will be reflected in a future application to the Ministry of Energy, Mines and Petroleum Resources for approval to construct the project.

A "News Brief" has been enclosed to provide you with details on the project. For further information please call Mr. Jeff Barker, the Project Manager, at 663-4014 or Mr. Terry Parsons, our Community Relations Coordinator at 663-4458.

Yours truly,

J.C. Edwards

Enclosure

c: J. Barker
T.W. Parsons

Contact List
Press & Media

Abbotsford-Clearbrook Times
33228 South Fraser Way
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Larry McAllum

Abbotsford, Sumas & Matsqui News
34375 Cyril Street
Abbotsford, B.C. V2S 2H5
Ph: 853-1144 Fx: 522-0738

E.J. Mark Rushtan
E.J. Steve Greenwood

Aldergrove Star
3089 - 272 Street
Aldergrove, B.C. V0X 1A0
Ph: 856-8303

E.J. Rudy Langmann
Kirk Langmann

MSA Cablevision Ltd.
(Community Channel 3)
31450 Marshall Road
Abbotsford, B.C. V2T 3X8
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Dir. Drew Kirby

CFVR-AM (850)
2722 Alwood Street
Abbotsford, B.C. V2T 3R8
Ph: 859-5277 Fx: 859-9907

News. Dir. Richard Dettman

Langley Times
Box 3097
20525 Fraser Highway
Langley, B.C. V3A 4S1
Ph: 533-4157 Fx: 533-0219

E.J. Mel Kasitsky

The Province
2250 Granville Street
Vancouver, B.C. V5K 1Z5

Attention - Brian Lewis

The Vancouver Sun
2250 Granville Street
Vancouver, B.C. V5K 1Z5

Attention - Rodney Nutt

Langley Advance
Box 8310
20494 Fraser Highway
Langley, B.C. V3A 4R6
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E.J. Bob Groenveld

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201 20627 Fraser Highway
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Ph: 534-0800 Fx: 534-4140

News Dir. John Rowton
Pro. Dir. David Marsden

BCHydro

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Letter to Native Organizations

J.C. Edwards
Manager, External Relations
(604) 663-3795
Fax (604) 663-3323

7 June 1991

Dear

Re: South Fraser Valley System Reinforcement

I am writing to inform you about B.C. Hydro's ongoing planning for the electrical transmission system in the south Fraser Valley.

In 1989, B.C. Hydro initiated studies on the transmission system in the area in conjunction with a possible transmission line interconnection with Puget Sound Power and Light (PSPL) in Washington State. During 1989 and 1990, discussions with the public and local and regional governments were held to assist in the planning process. Although the PSPL interconnection is no longer being considered by B.C. Hydro, planning for the electrical transmission system must continue.

Projected electrical load growth, arising from an expanding population and commercial/industrial development in Langley, Matsqui, Abbotsford and Chilliwack will necessitate reinforcement of the transmission system if B.C. Hydro is to provide a reliable electricity supply. Electricity for these areas now comes from the Bridge River generating plant near Lillooet and from other large generating plants in the interior which feed into Ingledow substation in Surrey. Electricity from these two major sources feeds into smaller substations in Langley, Matsqui and Chilliwack where it is distributed to customers.

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To address this, there appears to be three feasible reinforcement options to meet projected load growth in the south Fraser Valley area. Each involves modifying one of three existing 230 kV substations located in the south central Fraser Valley. Although each option has its merits, reinforcement of the Clayburn substation in Matsqui appears to be the most favourable for a number of reasons. High levels of growth and electrical load are expected to continue in Matsqui. As well, development at Clayburn would give the longest period of service without the need for further additional facilities elsewhere. The Clayburn substation site is large enough to accommodate the needed facilities and there is an existing right-of-way connecting it to the 500 kV transmission line nearby. Hence, no additional land would be required. From an environmental standpoint reinforcement of Clayburn is likely to cause the least overall impact. The right-of-way area, most of which is a reclaimed landfill site, may therefore be made more useful for secondary public purposes.

B.C. Hydro is now contacting interested parties and property owners adjacent to the existing Clayburn substation in an effort to obtain their input on its proposed reinforcement. The results of these discussions will be reflected in a future application to the Ministry of Energy, Mines and Petroleum Resources for approval to construct the project.

We would welcome any comments you may have and will continue to keep you informed about the project. A "News Brief" has been enclosed to provide you with details on the project. For further information please call Mr. Jeff Barker, the Project Manager, at 663-4014 or Mr. Terry Parsons, our Community Relations Coordinator at 663-4458.

Yours truly,

J.C. Edwards

Enclosure

c: J. Barker
T.W. Parsons

Chief Merle Julian
Matsqui Indian Band
RR #1, 31753 Harris Road
Matsqui, B.C.
V0K 1S0
Chief Julian

Mr. Joe Hall
Sto:Lo Nation Canada
Political Branch
PO Box 280
13-7201 Vedder Road
Sardis, B.C.
V2R 1A6
Mr. Hall

Chief Lester Vernon Ned
Sumas Indian Band
RR #4, 3092 Suams Mtn. Road
Abbotsford, B.C.
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Chief Ned

Mr. Clarence Pennier
Sto:Lo Tribal Council
PO Box 310
Sardis, B.C.
V2R 1A7
Mr. Pennier

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Second Letter to Matsqui Council

J.C. Edwards
Manager, External Relations
(604) 663-3795
Fax (604) 663-3323

25 June 1991

Mayor Dave Kandal and Council
District of Matsqui
#200 - 32315 S. Fraser Way
Clearbrook, B.C.
V2T 1W7

Dear Mayor Kandal and Council:

I am writing to update you on B.C. Hydro's proposal to reinforce the Clayburn substation in Matsqui in order to meet projected demand for electricity in the Fraser Valley. The following public consultation steps have been implemented to date:

- M.L.A.'s, M.P.'s, local and regional governments in Chilliwack, Matsqui, Abbotsford, Langley, and Aldergrove were contacted regarding the project in early May. Native Bands and Tribal Councils in the Fraser Valley were also provided with project information and invited to comment on the project.

- Resource referral agencies operating under both provincial and federal jurisdictions were asked to comment on the technical, environmental, and resource aspects of the proposal.

- Approximately 350 property owners in the vicinity of Clayburn substation received a letter and "News Brief" describing the project in mid-May. Residents were asked for their input, and a toll free telephone number and clip-out comment form were provided for this purpose.

- Advertisements describing the project and inviting inquiries were run twice in each of the Abbotsford, Langley, and Aldergrove newspapers during the weeks of May 27 and June 3.

- In addition to the ads, the media received an information kit regarding the project. The project manager was interviewed for a public affairs radio broadcast in the Abbotsford area.

- Contacts were made with Matsqui area ratepayers groups and other key stakeholders.

- Project team members canvassed the area south of Maclure Road during the weeks of June 10 and 17 to discuss the Clayburn project with residents on a one-to-one basis. Forty residents were contacted directly to ensure that they had detailed project information, to respond to questions, and to note any concerns.

Response to the news brief mailout and the advertisements resulted in less than thirty enquiries. Rather than assume that the response level indicated a lack of concern with the Clayburn project, the project team focused on talking with residents who might be most affected, namely, those who back onto Maclure Road or who have a direct view of the substation. Although one resident opposed to the project has initiated a petition, the majority (thirty) of the residents contacted during the door-to-door canvass either had no concerns with the project or found that their concerns were answered with additional information. Three residents had some concerns but felt they could live with the project, three expressed no opinion, and four were opposed. The project team has made several offers to meet with the petition organizers to discuss their concerns, but to date they have not taken up the offers.

I will continue to keep you informed about the status of planning for the Clayburn substation reinforcement proposal. If you have any questions or require additional information in the meantime, please call Terry Parsons, our Regional Public Affairs Coordinator at 663-4458 or myself at 663-3795.

Your truly,

J.C. Edwards

c: T.W. Parsons

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Second Letter to MLA De Jong

4 July 1991

Mr. Harry De Jong, MLA
Central Fraser Valley
Parliament Buildings
Victoria, B.C.
V8V 1X4

Dear Mr. De Jong:

Thank you for your letter of 22 May 1991 and your concurrence with B.C. Hydro's proposal to reinforce the Clayburn substation in Matsqui in order to meet projected demand for electricity in the Fraser Valley.

I am writing to update you on the public consultation we have undertaken regarding the proposal. The following steps have been implemented to date:

- M.L.A.'s, M.P.'s, local and regional governments in Chilliwack, Matsqui, Abbotsford, Langley, and Aldergrove were contacted regarding the project in early May. Native Bands and Tribal Councils in the Fraser Valley were also provided with project information and invited to comment on the project.

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- Project team members canvassed the area south of Maclure Road during the weeks of 10 and 17 June to discuss the Clayburn project with residents on a one-to-one basis. Forty residents were contacted directly to ensure that they had detailed project information, to respond to questions, and to note any concerns.

Response to the newsbrief mailout and the advertisements resulted in twenty-six enquiries. Rather than assume that the response level indicated a lack of concern with the Clayburn project, the project team focused on talking with residents who might be most affected, namely, those who back onto Maclure Road or who have a direct view of the substation. Although one resident opposed to the project has initiated a petition, the majority (thirty) of the residents contacted during the door-to-door canvass either had no concerns with the project or found that their concerns were answered with additional information. Three residents had some concerns but felt they could live with the project, three expressed no opinion, and four were opposed. The project team has made several offers to meet with the petition organizers to discuss their concern, but to date they have not taken up the offers.

I will continue to keep you informed about the status of planning for the Clayburn substation reinforcement proposal. If you have any questions or require additional information in the meantime, please call me at 663-2653 or our Manager of External Relations, Jack Edwards at 663-3795.

Yours truly,

Thom M. Thompson
Manager
Government and Public Affairs

c: J.C. Edwards

BCHydro *proud of our Service*

Second Letter to Matsqui Area MP's and MLA's

4 July 1991

I am writing to update you on B.C. Hydro's proposal to reinforce the Clayburn substation in Matsqui in order to meet projected demand for electricity in the Fraser Valley. The following steps have been implemented to date:

- M.L.A.'s, M.P.'s, local and regional governments in Chilliwack, Matsqui, Abbotsford, Langley, and Aldergrove were contacted regarding the project in early May. Native Bands and Tribal Councils in the Fraser Valley were also provided with project information and invited to comment on the project.

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I will continue to keep you informed about the status of planning for the Clayburn substation reinforcement proposal. If you have any questions or require additional information in the meantime, please call me at 663-2653 or our Manager of External Relations, Jack Edwards at 663-3795.

Yours truly,

Thom M. Thompson
Manager
Government and Public Affairs

c: J.C. Edwards

Mr. Peter A. Dueck, MLA
Central Fraser Valley
Parliament Buildings
Victoria, B.C.
V8V 1X4

Mr. Robert L. Wenman, MP
Fraser Valley West
House of Commons
Parliament Buildings
Ottawa, Ontario
K1A 0A6

Mr. Ross Belsher, MP
Fraser Valley East
House of Commons
Parliament Buildings
Ottawa, Ontario
K1A 0A6

Appendix C

Notes of Meetings

Fraser Valley System Reinforcement
Phase 2 - Interest Group Discussion Notes

Group: District of Abbotsford Planning Department

Date: November 15, 1990

In Attendance:

Wayne Gordon, Director of Planning
G. Barnett, Transmission Engineering, B.C. Hydro
K. Graeme, External Relations, B.C. Hydro
L. Rodgers, Consultant

Purpose:

The purpose of the meeting was to:

- provide information regarding B.C. Hydro's continuing study of Fraser Valley system reinforcement options, and details of the proposed Clayburn substation expansion
- seek input and respond to concerns regarding the Clayburn proposal
- describe and elicit suggestions regarding the public consultation process.

Discussion:

L. Rodgers explained the purpose of the meeting and G. Barnett described the Clayburn substation proposal.

Mr. Gordon asked whether sites in Abbotsford are still being considered for new substation construction. The project team responded that, while a new substation site had not been ruled out entirely, the results of consultations held as part of the PSPL Intertie project had favored expansion at Clayburn. Accordingly, B.C. Hydro is now examining the Clayburn option in detail.

Mr. Gordon suggested project information which would confirm that it is the Clayburn site which is the focus of further planning and consultation. The project team committed to sending a project newsletter once printing was completed.

Mr. Gordon stated that the District of Abbotsford had no concerns if the substation expansion takes place at Clayburn, and he offered a letter confirming this position. The project team suggested that a letter would not be required at this time, but would be appreciated in response to correspondence which will be sent to the District to accompany the project newsletter.

(**Note**: Mr. Gordon wrote to confirm the District of Abbotsford's views in May, 1991)

Fraser Valley System Reinforcement
Phase 2 - Interest Group Discussion Notes

Group: District of Matsqui Planning and Public Works Departments

Date: November 15, 1990

In Attendance:

Paul Moritz, Director of Planning
Geri Boyle, Deputy Director of Planning
Jim Duckworth, Deputy Director of Public Works
G. Barnett, Transmission Engineering, B.C. Hydro
K. Graeme, External Relations, B.C. Hydro
L. Rodgers, Consultant

Purpose:

The purpose of the meeting was threefold:

- to provide information regarding B.C. Hydro's continuing study of Fraser Valley system reinforcement options, and details of the proposed Clayburn substation expansion
- to seek input and respond to concerns regarding the Clayburn proposal
- to describe and elicit suggestions regarding the public consultation process.

Introduction:

L. Rodgers explained that the purpose of the meeting was to continue with consultations regarding Fraser Valley substation reinforcement which had taken place during 1989 and 1990 as part of the Puget Sound Power and Light Intertie proposal. She said that although the feedback to date was that Clayburn substation was the most suitable site for expansion, most of the public's interest had been focussed on the now cancelled intertie proposal. Accordingly, B.C. Hydro is doing additional public consultation specific to Fraser Valley system reinforcement.

G. Barnett described the Clayburn reinforcement proposal with the aid of aerial and oblique photographs and a legal composite of the area.

Discussion Topics:

1. **Need for the Project**

   The Planning and Public Works representatives are well aware of the extent of residential, commercial and industrial growth in the Matsqui and therefore understand the need to reinforce the electrical system in order to meet the area's future needs. Because B.C. Hydro purchased the Clayburn property with the express intent to expand the substation at some point, the District has assumed expansion as a given. They support the Clayburn reinforcement proposal.

2. **Proposed Playing Fields on Right of Way**

The District would like to develop soccer and softball playing fields on B.C. Hydro's right of way through the landfill site immediately southeast of the existing substation. The site was filled and graded last year. A settling period of up to ten years or more is required before the site will be suitable for playing fields. In order to preserve the site for future recreation development, the planners prefer the B.C. Hydro **not** build the 500 kV transmission line loop on the right of way. Their concerns are that:

- the transmission towers would reduce the area available for playing fields
- soccer balls and softballs might hit the overhead transmission lines
- EMF emissions might have a detrimental effect on the health of playing field users.

The Matsqui District representatives suggested that B.C. Hydro investigate constructing the 500 kV loop to the west of the landfill, on the 200 year flood plain. The flood plain is zoned for industrial use, on a special permit basis. In addition to resolving the transmission loop/playing field conflict at the landfill site, the flood plain has other advantages. The soils there are better suited to construction, and the visibility of the loop from residential areas south of MacLure Road could be reduced.

The project team said that B.C. Hydro would explore the viablity of this loop location option.

3. **Environmental Issues**

Gas Seepage

Matsqui Public Works is inviting and examining ideas on how to collect the liquid methane gas which is building up in the landfill. Options which have come up so far include collecting the gas for incineration or tapping the site to filter off the gas. Gas seepage would have to be controlled before the site could be developed for recreation use.

G. Barnett noted that B.C. Hydro will need to ascertain whether the gasses could present any potential danger to people constructing the transmission loop.

Willband Creek

The Ministry of Environment required that the District put a ditch around the landfill in order to protect fish-bearing Willband Creek on the landfill's eastern border. Regular and ongoing water quality tests have found no evidence of contamination. The project team advised that any potential impacts to the creek's fisheries will be examined as part of the environmental studies conducted for the Clayburn project.

4. **Planning Issues**

Road Rights-of-Way

G. Barnett inquired about the status of the road dedications shown on the legal composite for the Clayburn site. Mr. Moritz explained that the dedications were still in effect. G. Barnett advised that decisions about transmission tower placement would respect all rights-of-way.

Existing Underground Pipes

Sewage pipes leading to the former sewage lagoon are located around the perimeter of the landfill. Excavation acitivities for the Clayburn project would need to be at least 10 meters away from the pipes to minimize the potential for a broken pipe causing groundwater contamination.

New Developments

The planners summarized developments which have been approved or proposed in the vicinity of Clayburn.

A 52-unit townhouse is under construction between Clearbrook Estates Trailer Park east of Horn Street and the flood plain to the east of the landfill. A 15 meter buffer to the east of the development will provide only minimal screening from the 500 kV loop and expanded substation. The project team said that contact with the developer will be attempted as part of the consultation process.

Townhouse developments are also proposed further west and to the north of the Clayburn site which, if approved, will have views of the Clayburn site.

5. **Public Concerns**

L. Rodges asked for ideas and suggestions about what concerns the public may have about the project.

P. Moritz suggested that it will be important to make it clear to the public that the project does not involve expansion of the 500 kV right-of-way. G. Barnett explained the need to add ground wires to the middle of the three 500 kV lines for approximately one mile both east and west of the substation. He confirmed that the additions would not encroach upon the edge of the right-of-way. There was agreement that, prior to starting the ground wire addition activity, it would be useful for B.C. Hydro staff to knock on doors in the adjacent residential areas to explain what they are doing.

The project's visual impacts will concern residents with a view of the Clayburn site. The planners suggested that visual impacts could be reduced if aesthetic steel poles were used for the transmission line loop. G. Barnett explained that the steel pole configuration required to carry the 500 kV loop could actually have a greater visual impact than lattice towers. Mr. Moritz suggested that a sketch of the various configuration options would help the public to agree with the choice of towers.

The planners also recommended that the two lines of the loop be located as close together as possible. G. Barnett explained that the minimum distance between the two lines must be 40 meters.

Conclusions

The project team thanked the Planning and Public Works officials for their input and information, and said that, once available, additional project information materials will be forwarded.

Fraser Valley System Reinforcement
Phase 2 - Interest Group Discussion Notes

Group: Matsqui Transfer Station, operated by the Greater Vancouver Regional District

Date: May 28, 1991

Contact: Paul Remillard, Solid Wastes Department

Summary of Telephone Discussion between Mr. Remillard and Consultant L. Rodgers

Purpose of Contact:

Matsqui Transfer Station is located adjacent to Clayburn substation on the east side. Truck traffic accesses the transfer station daily along Valley Road west off Highway 11. Contact was initiated for three purposes:

- to apprise Mr. Remillard of the proposal to reinforce Clayburn substation
- to respond to questions or concerns which might arise
- to seek input and information.

Results of Discussion:

1.0 Clayburn Expansion

Mr. Remillard advised that he has no concerns with the plan to expand Clayburn substation.

L. Rodgers asked Mr. Remillard specifically whether he anticipated any problems with the additional truck traffic which would be using Valley Road for access to Clayburn during the construction phase. Mr. Remillard replied that the only possible conflict which could arise is with the District of Matsqui's tentative plan to upgrade Valley Road. He agreed that it would be useful for B.C. Hydro to keep himself and the District of Matsqui informed of Clayburn construction plans in case road access is temporarily disrupted.

2.0 Public Consultation

Mr. Remillard described some of his experiences with property owners in the vicinity of Clayburn substation during the public consultation on Matsqui Transfer Station. He said that the residents in the Northwest Corner, along Downes Road, had issues with noise from construction and operation. Construction noise outside regular 9 to 5, Monday to Friday, working hours would probably not be tolerated. Residents might also be sensitive to any additional noise resulting from operation of the expanded substation. He further suggested that residents would appreciate a visual buffer from the substation

L. Rodgers thanked Mr. Remillard for his suggestions. In response to his request for a drawing of the proposed substation expansion, an aerial photograph, project News Brief, a legal composite of Clayburn along with a covering letter were sent from External Relations on June 10.

Fraser Valley System Reinforcement
Phase 2 - Interest Group Discussion Notes

Group: Centennial Ratepayers Association

Date: June 3, 1991

Contact: John Toews, President

Results of Telephone Discussion between John Toews, President, and L. Rodgers, Consultant

Purpose:

B.C. Hydro representatives met with spokespersons for the Centennial Ratepayers Association on August 15, 1990, regarding the Puget Sound Power and Light Intertie and Fraser Valley substation reinforcement study. At that meeting, Mr. Toews and Mr. Fred Kohn discussed several concerns regarding route alignments for the proposed intertie. Because they recognized its necessity in meeting the needs of Fraser Valley residents, the Association did not have a concern with the substation reinforcement aspect of the study. Contact was initiated in Phase 2 to update the Ratepayers Assocation on the Fraser Valley System Reinforcement Project and to determine any specific questions or issues regarding the proposal to expand Clayburn substation.

Discussion Topics:

1. Overview of Fraser Valley System Reinforcement Project

L. Rodgers provided an update on the studies and consultation for Fraser Valley system reinforcement which have taken place since the August meeting, including:

- the need for system reinforcement in the context of residential and commercial load growth in the Fraser Valley
- technical studies of potential substation reinforcement sites resulting in the assessment that expansion of Clayburn substation appears to be the most effective option for meeting anticipated demand for electricity in the valley
- a description of the Phase 2 public consultation program.

2. EMF Effects

Mr. Toews expressed his Association's strong concerns about perceived health hazards associated with the EMF effect from hydroelectric transmission lines. The Association has taken the position that B.C. Hydro should put all new transmission lines underground in order to minimize EMF effects.

L. Rodgers explained that the proposed transmission line loop and substation expansion at Clayburn would be located on vacant right-of-way land and that no additional EMF effect to residential areas around the site was anticipated. Mr. Toews agreed that the location of the loop would not present much problem in terms of additional health risks to residents.

3. Visual Aesthetics

Mr. Toews stated that the Association perceives transmission lines to be eyesores to the Fraser Valley landscape. This is the second reason for the Association's position that all new lines should be constructed underground.

L. Rodgers said that the project team had toured the area in the vicinity of Clayburn substation to determine the extent of residences wth a view of the site. A mail list of property owners in those areas was subsequently developed. In order to ensure that they had access to information and the opportunity to comment, a letter and news brief describing the project was sent to the mail list in May.

Ms. Rodgers also said that constructing the transmission line loop underground was probably neither technically nor economically feasible, but that she would pass on Mr. Toews' comment to the project team.

Conclusions

Mr. Toews had no concerns specific to Clayburn substation reinforcement. His Association's chief concerns are with the EMF and visual effects of any new transmission or distribution lines constructed in the Fraser Valley. Their position is that all new lines should go underground. L. Rodgers asked whether further information or discussion of the Clayburn project was desired. Mr. Toews responded that he would like to have project information to take to a meeting of his executive. A news brief was sent from External Relations on June 13, along with an offer to meet with the Centennial Ratepayers Association if so desired.

Fraser Valley System Reinforcement
Phase 2 - Interest Group Discussion Notes

Group: Matsqui Recyling Depot, operated by Matsqui Community Services Society

Date: June 5, 1991

Contact: John Richards, Matsqui Community Services Society

Summary of Telephone Discussion between Mr. Richards and Consultant L. Rodgers

Purpose of Contact:

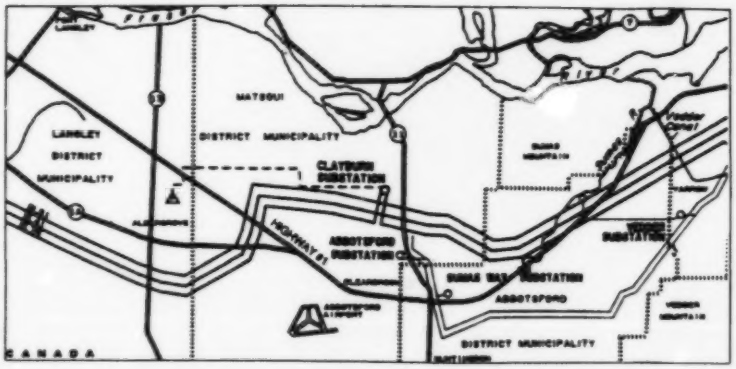
The Recycling Depot is located adjacent to Clayburn substation on the east side. Access is from Valley Road, west off Highway 11. The consultant contacted Mr. Richards to describe B.C. Hydro's proposal to expand Clayburn substation, and to determine whether he had questions or concerns with the proposal as it relates to the recycling depot.

Results of Discussion:

Mr. Richards advised that he did not forsee the Clayburn proposal interfering in any way with operations at the recycling depot. He suggested that B.C. Hydro ensure Matsqui Public Works knows about the project. L. Rodgers said that the project team had met with the Public Works Department regarding the project in November, and that Council, Planning and Public Works staff have recently received additional information.

Appendix D

Press Releases and Advertisements



B.C. Hydro South Fraser Valley Electrical System Reinforcement

To meet the area's growing demand for electricity, B.C. Hydro has studied options for reinforcing its electrical system in the South Fraser Valley.

Of the options examined, reinforcement of the Clayburn substation on Valley Road off Highway 11 in Matsqui appears to be the most effective in meeting the area's electricity needs.

B.C. Hydro is therefore concentrating its technical and environmental studies on the effects of enlarging the existing 230 kV Clayburn substation to accept 500kV transmission capacity.

If you have any comments or questions or if you would like to receive information on the South Fraser Valley Electrical System Reinforcement, please call our toll-free telephone line at 1-800-663-1377 or complete and mail the form below.

☑ *Please keep me informed about South Fraser Valley System Reinforcement*

NAME: .....

ADDRESS: .....

POSTAL CODE: ..... PHONE: .....

REPRESENTING: .....

Comments: .....

.....

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EXTERNAL RELATIONS
1610 - 808 Nelson Street, Vancouver, B.C. V6Z 1Y3
Fax: 663-3323

BC hydro

B.C. Hydro Advertisement
3 cols x 146 lines = 438 MALs
For insertion in:
Abbotsford-Clearbrook Times
Abbotsford, Sumas & Matsqui News (weekend)
Aldergrove Star
Langley Times
Langley Advance
Prepared for Martha King Consulting
By Kenneth MacKenna Ltd.

Marsha King Consulting Inc.
1330 Seymour Street
Vancouver, B.C. Canada V6B 3P3
Telephone (604) 682-2251

PRINT ESTIMATE

B.C. Hydro

Estimate Number: BCH-91-23

Date: May 23, 1991

External Relations

cc:

Publication	Insertion Date	Space	Net Rate	Net Cost	Net Total

Ad Heading: B.C. Hydro South Fraser Valley....3 x 146L

Abbotsford Sumas Mat
Matsqui News (Wknd) Sat, June 1
Sat, June 8
total circ: 39,526

Abbotsford-Clearbrook
Times Wed, May 29
total circ: 38,212 Wed, June 5

Langley Times Wed, May 29
total circ: 30,121 Wed, June 5

Langley Advance Fri, May 31
Fri, June 7
total circ: not avail. (approx. 10,000)

Aldergrove Star Thr, May 30
total circ: 5,000 Thr, June 6